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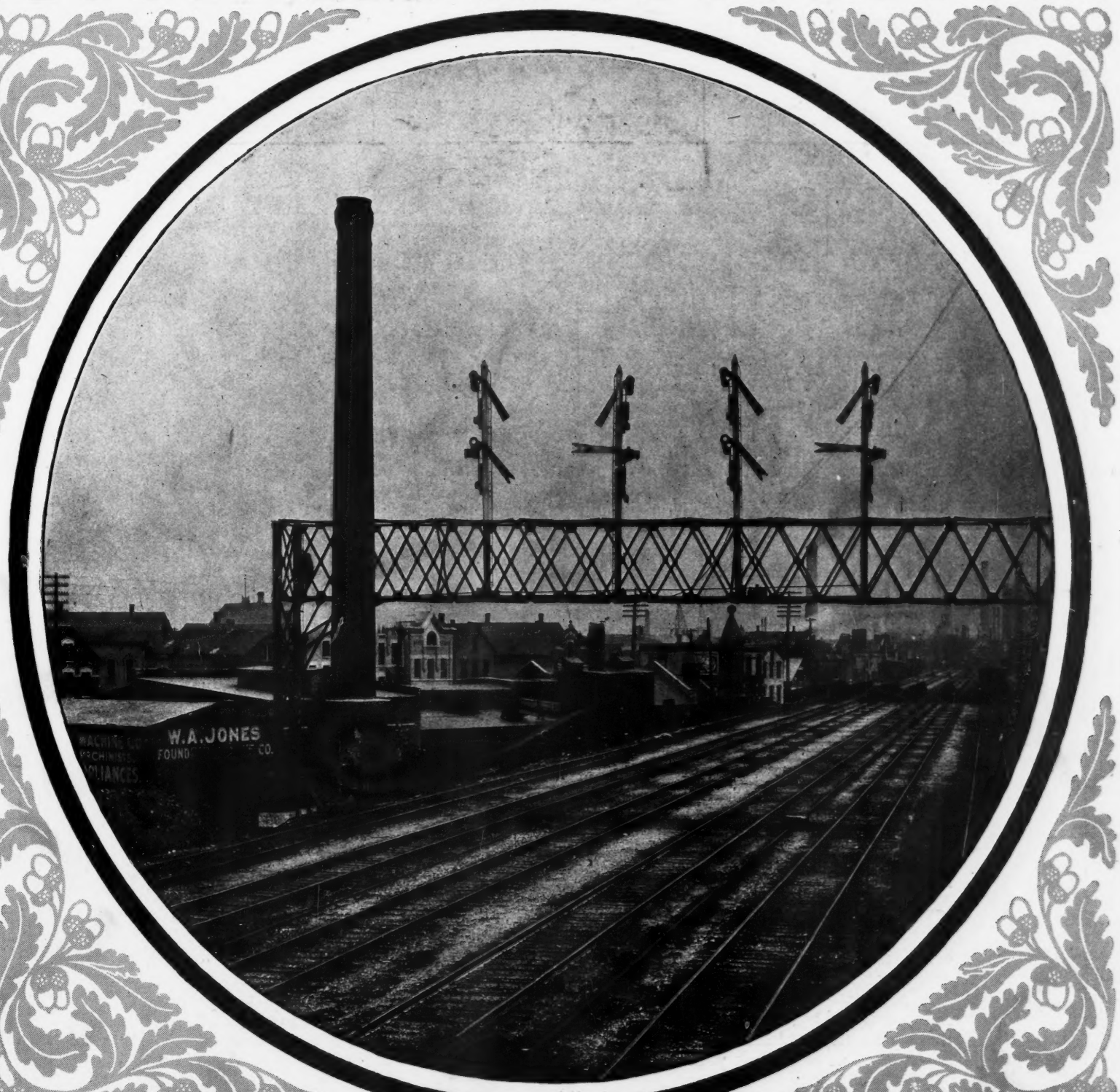
EDITED BY GEORGE HARVEY



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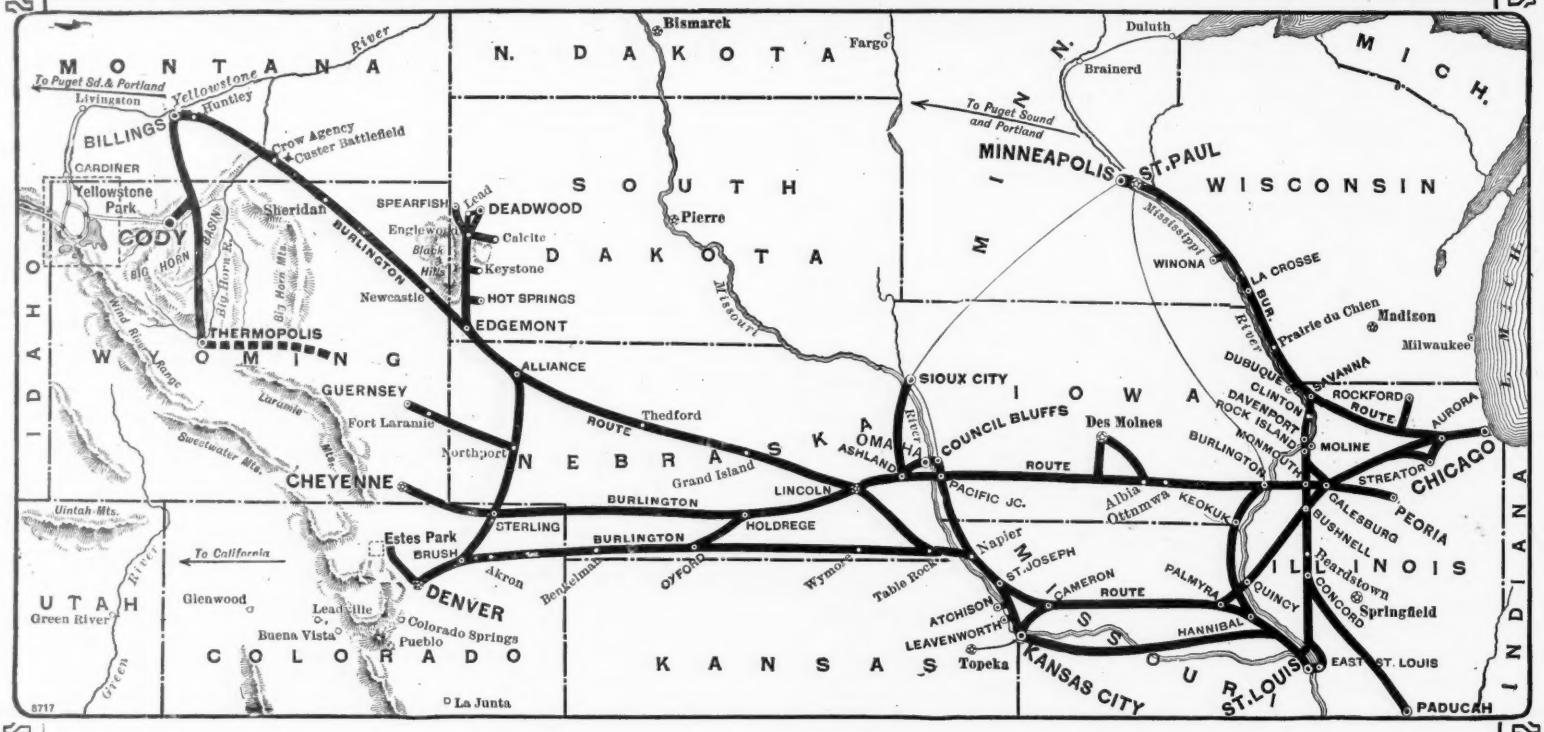

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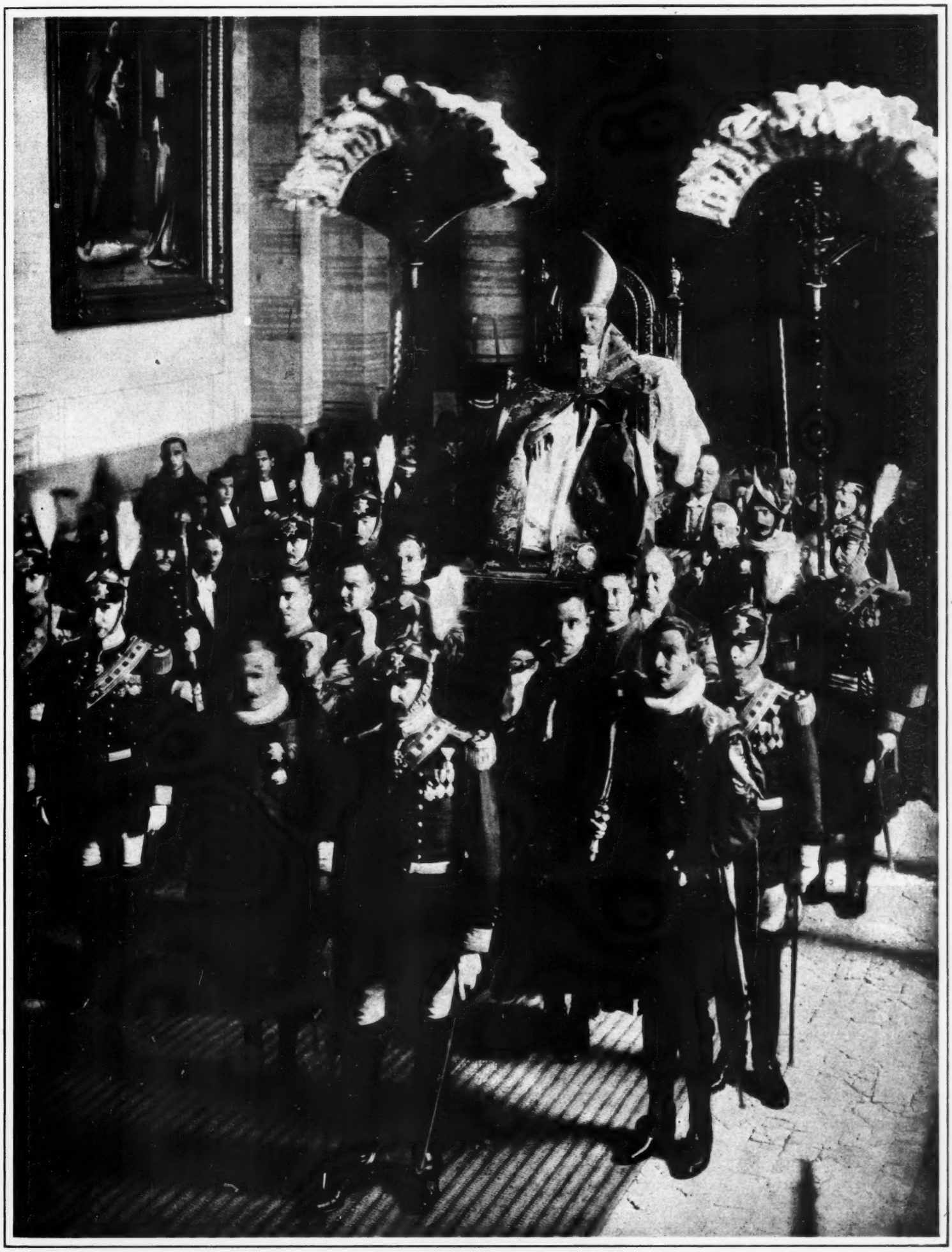
HARPER'S WEEKLY
A JOURNAL OF CIVILIZATION

Vol. LVI. NEW YORK, DECEMBER 28, 1912 No. 2923



A RECENT CEREMONY AT THE VATICAN

His Holiness Pope Pius X. on his way to the consistory at which three new cardinals were lately created. He is shown in his chair of state, borne on the shoulders of the Papal Guard

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THIRTY-SIX PAGES

NEW YORK CITY, DECEMBER 28, 1912

Terms: 10 Cents a Copy—$4.00 a Year in Advance

Postage free to all subscribers in the United States, Mexico, Hawaii, Porto Rico, the Philippine Islands, Guam, and Tutuila, Samoa. Entered as second-class matter at the Post-office Department, Ottawa, Canada. Foreign postage, $1.56

Entered at the New York Post-office as second-class matter

HARPER & BROTHERS

FRANKLIN SQUARE, NEW YORK, N.Y.

LONDON: 45 ALBEMARLE STREET, W.

George Harvey, President, Franklin Square, New York, N. Y.
Frederick A. Duneka, Secretary, Franklin Square, New York, N. Y.
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COMMENT

The "Outs" and the "Ins"

PERSONS who in their fervency for social changes and regeneration have come to feel that present times have awful ailments, are invited to consider now and then if, after all, they would like things so very much better if the "ins" were out and the howling "outs" were in. When DEAN RICHMOND or some other early president of the New York Central was invited to discharge all conductors who had gold watches and diamond pins because they must have been secreting fares, he refused on the ground that there was an economy in continuing in employment men who had already provided themselves with pins and watches. The existence of a due proportion of affluent people in society will continue, we suppose, to be a feature of human life. That we have the poor always with us implies the continued presence also of others who are not poor. If it were possible to take the superfluous substance away from those who have it now, it might easily change hands without any very acceptable alteration in human concerns. It does change hands as it is; is constantly and gradually changing hands in all sorts of ways—by inheritance, by restitution, by fine, by gift, by speculative indiscretion, by decay, by misfortune, by drink, by chorus-girl, and all the other ways. To retain possessions long, almost any man or family must maintain some degree of useful vigor and gumption. Otherwise some of the "outs," in their constant striving, get the possessions away and take their turn as "ins."

Some enormously useful people in this world, especially teachers, philosophers, and inventors, don't get their material dues. Some of them get their pay in spiritual and mental rewards. Those are the greatest rewards of all, but there is very little growling because the "outs" don't get their share of them. The discontent is all about the distribution of the material things. That will be improved, not by persons who have shown incapacity to provide for their own material needs, but by persons in whom that capacity is so large and so developed that they can get far more than they need for themselves.

In other words, it is to the constructors and developers and providers and makers that we must look for the increase of wealth and comfort in this world, rather than to the soap-box enthusiasts and deprecators of "capitalistic machinery." The world does not run itself: it has to be wound up every morning. The "ins" are by no means its whole machinery, but they include a large proportion of the winders-up of that machinery, whose labors we should miss enormously if they quit.

The Senate and the Tariff

Making trouble is one thing; foreseeing trouble and preventing it is another thing. It is all very well to decry the sort of man who needlessly sets people by the ears. He ought to be decried. But it is fatuous to ignore real dangers.

Every true Democrat, every sincere tariff-reformer, has reason to be pleased at the prompt and businesslike way in which the House leaders are already making ready for the task and opportunity of next spring. Speaker CLARK and OSCAR UNDERWOOD, both defeated candidates for the first place in their party and in the country, are standing shoulder to shoulder in the fight for a sincere and thoroughgoing fulfilment of the party's pledges concerning the tariff. The Ways and Means Committee will hold during the special session the usual hearings preliminary to a revision of the tariff laws. When the special session convenes, the House will be ready with a bill or bills that will do what the party has promised and the country has voted for.

Will the Senate be ready? Will the Democratic leaders in that body act, when their time comes, with the same singleness of purpose, the same loyalty and sincerity, the same fidelity to principle and to pledges? No intelligent and candid Democrat can deny, even to himself, that on this point there is a measure of uncertainty.

It is not too much to say that the measure of that uncertainty is the measure of the first great danger, of the chief danger, to the incoming administration. It is idle to pretend differently. Recent history is too fresh in everybody's memory. This journal would be particularly blameworthy if it should not look to the real interest of the party it favors at least as candidly as it considered the welfare of TAFT and the Republican party in the spring of 1909. For the wrecking of the TAFT administration did not begin with the ROOSEVELT uprising against it. It dates back even farther than the Winona speech. It was discernibly imminent, and we reluctantly announced its probability, from the day when it first clearly appeared in the special session that ALDRICH had control of the Senate, and that the country's hope of substantial revision downward was going to be flouted and denied.

What is the use of veiling the supreme importance of preventing anything like that from happening next spring? If the Senate is to carry out in good faith its part of the Democratic programme, then it must be led by Senators loyal to that programme. It must not be controlled by Senators who obey any other guidance than the avowed and definite and approved principles of their party. Nobody wants to see a mere row between two factions, neither obeying any higher motive than selfishness, over committee assignments. Nobody wants to see experience disregarded merely because there is a majority of newcomers. But it is right, it is necessary, to insist that in this crisis the party's leadership shall be sincere, unquestionably sincere. Senators who see that necessity are justified in organizing to meet it. If they are a majority of the caucus, as we trust and believe they are, they are justified in using their strength. Harmony is desirable; compromise is often defensible; but no Democrat should shrink from the criticism he may encounter by fighting as quick and as hard as need be for the enactment of a genuinely Democratic tariff by a Democratic Congress.

We May Go Wrong

It is interesting to watch the sun rise and the mists disappear. It is equally interesting to watch sense and knowledge prevailing over ignorance and prejudice. But the two processes are not very much alike. The first is steady and regular and inevitable. The sun rises every day, and on time. When there is ignorance and confusion and prejudice and wrong-headedness we cannot be sure that at any particular time enlightenment will dispel them. We cannot be absolutely sure that they will be dispelled at all. We can only feel reasonably confident, reviewing the history of civilization, that the light will conquer.

It is that way with the really most troublesome of our present-day public questions. Finance is the stumbling-block of democracies. There is an instinct which in many things guides a self-governing people. They have an instinct for men. They have an instinct for certain kinds of measures. But they can hardly be said to have a trustworthy instinct when it comes to questions of currency and banking. In that whole department of government, extremely important as it is to everybody's welfare, democracies have no superiority over the less free communities—and that is putting it mildly. They are quite as likely to go wrong. The average man's knowledge of this subject is slight, his ideas are vague, and his feelings are strong. Blunders are natural. Of course, there is always the great compensation: a free country can change its mind, can correct its blunders, and it is only the persistent error that is fatal. Still, blunders in this kind are exceptionally costly. It is thoroughly discouraging to have them keep recurring.

We may make another blunder when we undertake, as we very soon must, a revision of our laws on currency and banking. Somebody remarked the other day that after making as many blunders as we already have we surely ought this time to go right. On that point we are hopeful, but we resolutely avoid cocksureness.

Also, We May Go Right

Look at the real situation. There is a practical consensus of the really competent people as to what should be done. Our currency should be taken off its present obsolete and illogical basis of government bonds, which renders it inelastic and unresponsive to the needs of business, and put on the same basis with other modern currencies, namely, commercial paper and other safe business assets. Our absurd law concerning bank reserves should be changed, so that in time of stress our banks, instead of fighting, shall co-operate, and so that there shall be, in this rich country, a sufficient and always available common reserve to head off panics. Instead of leaving credit, which is comparable to the nerves of the human body, to be controlled irresponsibly, we should provide for it the most responsible and expert and conscientious control attainable. To people who have taken the trouble to study the question these things are quite obvious.

But they are not obvious to the majority of voters—not yet. The majority of voters are either suspicious of such ideas, because they seem to be entertained by bankers and other men of wealth, or else uninterested, indifferent. The majority of politicians industriously and carefully reflect the prejudice or indifference of the voters. So it is not easy to get much of a hearing for sane, thoughtful talk about the matter. It is much easier to get a hearing for sensational, misleading talk, for quack remedies, for fiat money schemes, and the like; particularly easy to get a hearing about the enormities of the rich—who have grown rich, be it remembered, under our present defective and out-of-date system.

Nevertheless, there are signs that the sun *is* rising. After all, the majority of voters are honest, and they are not fools. The politicians are not vicious—merely servile and timid. If a few statesmen will take the lead at Washington, there may be a surprising subsidence of the demagogy on this subject, which already knows itself insecure. The Sixty-third Congress has extraordinary possibilities.

Can We Have a Budget?

Undoubtedly we ought to have a budget, but undoubtedly there are real difficulties in the way of our having one. They arise from the simple fact that Congressional government in America is not like parliamentary government in England or in any of the various countries that have systems more or less modeled on the English system.

The main difficulty lies in the fact that in this country the ministry, or what corresponds to it, neither controls the Legislature nor is controlled by it. There is no guarantee of their acting in harmony. Moreover, there is no assurance that the two Houses of the Legislature will act in harmony. It follows, therefore, that there is no source from which a budget can issue with any kind of authority. The natural person to make a budget is the Secretary of the Treasury, which is substantially what the President proposes. On the whole, the Secretary is in the best position to forecast both the revenues and the expenses of the government. But Congress objects to allowing any executive department to exercise this function, and as Congress is undeniably responsible both for raising the revenues and for making the appropriations, there is a measure of justice in the contention.

But how, on the other hand, is Congress to exercise the function? It is not legislation, and there is no practicable way for the two Houses to do it jointly. Representative SHERLEY proposes to let the House of Representatives do it through a committee, but there is no way to insure the acceptance of the committee's work by the Senate or the President. One doesn't feel sure it would be always accepted by the House itself.

Of course the desideratum is an executive official responsible to Congress and also, in the English way, sure of the support of Congress. But to create such an official would be, not to amend the Constitution, but to rewrite it. The problem is really in a sense insoluble.

Still, it is a gain that we seem to be at last recognizing the extreme desirability of a budget, and perhaps in time mere common sense will give to the estimates of the Treasury Department, as

commended to Congress by the President, an influence that will render them only a little less than authoritative.

Mr. Whitman

District-Attorney WHITMAN deserves praise, and is getting it. His business is prosecuting criminals, and he has sent several notable gentry of that ilk where they belonged. There were difficulties about the discharge of his duty, and he and his assistants overcame those difficulties. He and they have done very well indeed, and this town should appreciate their services.

It is perfectly natural, too, that people should be talking of rewards—of promoting Mr. WHITMAN, making him Mayor, Governor, and the like. It mightn't be a bad thing to do. Governor HUGHES, now Mr. Justice HUGHES, made his reputation by the conduct of an investigation of insurance companies, and on the strength of it he was elected Governor, and on the whole he made good. Maybe it is all right, here in America, since we have no peerages to confer on public servants who do well, to let them all feel that higher and higher offices await excellent public service.

Still, there's a doubt about the policy. A good district attorney will not necessarily prove a good Governor or a good chief justice or a good President. More than that: we are not sure that it is entirely well to spread the notion that rewards of any kind—except the reward of self-approval, of the consciousness of duty done—will follow excellent public service. We doubt if really excellent public service is usually, if ever, elicited by the hope of rewards. We suspect that Mr. WHITMAN did his duty because it was his duty—not because he foresaw that doing his duty would win him some higher office.

We suspect, in fine, that Mr. WHITMAN and men of his kind find it somehow quite worth while to serve the public without any special consideration of what they themselves are going to get out of it. We are glad to think that our best colleges are training young fellows to that view of public service. It is not an unreasonable or unnatural view of it. Plenty of normal men, with no pretensions to saintliness, have unaffectedly held it. Consider the death-rate in battles and it will not seem so wonderful that in civil affairs a district attorney, a sheriff, a Governor, a President, should not be as faithful as a common soldier.

All honor to the man who serves us all faithfully, but don't let us assume that he wants to be paid for it. Let us assume, rather, that he wants to keep on serving in whatever office or function he can fill the best.

Mr. Morgan Testifies

There were some delightful passages in Mr. MORGAN'S testimony before the Pujo Committee. The dialogue between him and Mr. UNTERMEYER gives emotions comparable to those a reader gets out of one of BERNARD SHAW'S plays. All through there is a proffering of large propositions by Mr. UNTERMEYER and a trimming of them down to practicable size by Mr. MORGAN. Moreover, the dialogue was as full of humor as it was of seuse. As thus:

> Does your New York house do a general banking business? asked counsel for the committee.
>
> We try to, sir, said Mr. MORGAN.
>
> Q. Do you take deposits? A. We do.
>
> Q. You do the business that is done by a bank? A. Exactly, as far as we can.

Here's another passage from the press report:

> Mr. MORGAN and the counsel then engaged in a discussion of the principles of money and circulation. Mr. UNTERMEYER sought to lay the foundation for proving that a money trust exists. Mr. MORGAN did not agree with him in the least. He said it is absolutely impossible for any man or group of men to get control of all the money or the credit in the world. It is inconceivable, he said.
>
> Mr. MORGAN added:
>
> I know lots of men, business men, too, who can borrow any amount, whose credit is unquestioned.
>
> Is that not because it is believed that they have the money back of them?
>
> No, sir; it is because people believe in the man.
>
> And it is regardless of whether he has any financial backing at all, is it?
>
> It is very often.
>
> And he might not be worth anything?
>
> He might not have anything. I have known a man to come into my office and I have given him a check for a million dollars when I knew he had not a cent in the world.
>
> There are not many of them?
>
> Yes, a good many.
>
> Commercial credits are based upon the possession of money or property?
>
> Money or property or character.
>
> Is not commercial credit based primarily upon money or property?
>
> No, sir; the first thing is character.
>
> Before money or property?
>
> Before money or anything else. Money cannot buy it.
>
> So that a man with character, without anything at all behind it, can get all the credit he wants, and a man with the property cannot get it?
>
> That is very often the case.
>
> But is that the rule of business?
>
> That is the rule of business, sir.
>
> If that is the rule of business, Mr. MORGAN, why do the banks demand—the first thing they ask—a statement of what the man has before they extend him credit?
>
> That is a question which—that is what they go into; but the first thing they say is, I want to see your record.
>
> Yes; and if his record is a blank the next thing is how much he has got?
>
> People do not care then.
>
> For instance, if he has got government bonds, or railroad bonds, and goes in to get credit, he gets it, and on the security of those bonds, does he not?
>
> Yes.
>
> He does not get it on his face or his character, does he?
>
> Yes, he gets it on his character.
>
> I see; then he might as well take the bonds home, had he not?
>
> A man I do not trust could not get money from me on all the bonds in Christendom.
>
> That is the rule all over the world?
>
> I think that is the fundamental basis of business.

That is good to read. It puts man ahead of money. It says that character counts for more than property and that that is the rule of business. Moreover, it says so with power, with an undeniable candor and sense of conviction. They are good words to be read, coming from a man seventy-five years old of an experience of human affairs, and especially of business affairs, that is hardly rivaled and not exceeded in this world at this time.

The greatest thing in the world is a man.

It always is.

It always will be.

The Oldest Profession

The discussion of prostitution and its incidents, political and social, which is now prevalent in this town, has to do with a question of vast difficulty and perplexity. If the whole business of prostitution in New York were in the hands of respectable, upright, and humane persons who wanted to see it well conducted, we suppose there would be great improvement in the management of it. The trouble would be that the moment such persons got their hands on that business they would practise diligently to close it out. They could not endure to improve the management of it, except with a view to improving it out of existence. The business cannot stand improvement. Public sentiment cannot stand any regulation or segregation or protection of it that seems to accept and countenance it. Consequently it is always in bad hands and lives in the shade, and its protectors are the wolves and its regulators robbers.

It is bad when let alone and rather worse when harried, so that, as in regard to many other things, the mere philosopher is prone to fall back on the declaration that there is no use of trying to keep all the people from going to hell, that those to whom it belongs to go will go, and might as well go their own way, and that those who have sense enough to avoid it will avoid it.

But that is mere fatalism, and though it accords a good deal with observation, it isn't wholly true, and good people cannot settle back on it. They must continue to insist that people shall not go to hell, and work to hinder them. For them, the people for whom no cause is desperate, these words of Dr. HOWARD A. KELLY, of Johns Hopkins University, are commended:

> A successful campaign must ever look two ways—there must be both a tearing down and a building up. The strongholds of vice must be broken down, and at the same time the work of building up must be going on. The young must be protected from temptation; the questions which lead to vice must be met and answered, and the conditions under which it flourishes must be rectified. The public must be educated to a higher standard of morals.
>
> As soon as the vice question becomes prominent in any of our cities, it is interesting to see how it at once becomes a point of cleavage which separates our citizens into two opposing camps—one for closing up all the disorderly houses and for the repression and the extermination of vice, and the other declaring that vice should be segregated on the ground that this vice is as old as the world and will always exist.
>
> The latter party, driven to some specific declaration, advocates the segregation plan, demanding sequestration within definite bounds under medical inspection to keep out disease. Those who would thus protect vice declare that the closing of the houses would only scatter the evil. They declare, furthermore, that any attack on the pitiable inmates of the houses would be inhuman.
>
> The unfortunate part of this argument is that the historical background is a series of dismal failures—in Europe as well as in this country.
>
> On the other hand, the opponents of vice point to the experience of Los Angeles, Milwaukee, Des Moines, Lincoln, Rochester, and other cities to prove that closing the houses cleans to a large extent the localities. Experience has abundantly proven that vice begets vice, and that it is always a persuasive agent in spreading corruption. Wherever a citizen starts working in behalf of the downtrodden and the outcast of our cities, he soon discovers the intimate ramifications of vice with all the other moral—and many of the physical—diseases with which the city is affected.
>
> At first sight this usually proves discouraging, but later it becomes an inspiration, for when the purifying is rightly done, the civic house is swept and scrubbed clean.

All this sounds sensible, but of course it is not a plan of campaign for New York. The comment that comes readiest upon it is that the tearing down will do no good until the building up is ready to begin. Here we have had many spasms of tearing down, but never any adequate building up.

This practical sentiment is pretty general: that it is cruel and quite useless to harry and persecute the women who live by the street, but that it is always in order to catch and punish men who inveigle, incite, or employ them, or sell them protection, or rob or blackmail them. That seems a pretty good sentiment as far as it goes, but the habit is pretty strong in men to harvest women's crops, and the meaner the men the stronger is the habit. And when the women are not only defenseless, but almost indefensible, the situation is by so much the harder.

Emotional Propositions

General WASHINGTON was a fine figure of a man, and would look well in Westminster Abbey, where the celebrators of the centenary of Anglo-American peace in 1914 propose that he should be put. The American counter proposition for a statue of Queen VICTORIA ought to be acceptable, though one of the PITTS might make a fitter counterpoise for WASHINGTON. But these are rather breath-catching proposals, and make one hope that the centenary will leave us all as friendly as it finds us.

Will Carleton

WILL CARLETON, who died last week, was a poet not exactly of distinction, but of worth and certainly of renown. His *Farm Ballads* (Harper & Brothers), published years ago, had a remarkable sale from the start and still sells. His later books —*Farm Festivals, Farm Legends, City Ballads, City Festivals, City Legends, Rhymes of Our Planet,* and, latest, *Poems for Young Americans* —all found an unusual market and found it in fairly expensive form. For some reason a great many people were disposed to buy CARLETON'S books. Upward of six hundred thousand copies of his various books, all in verse, have been sold, and the sale still goes on.

We speak of it, not because it is commercially important as merchandising goes, but because these sales of verse so extraordinary and unusual indicate that CARLETON had something in him that people liked and wanted. So he had. He was a remarkable man. His powers and methods as a poet were primitive. He hardly belonged to literature at all. But he had melody and rhythm and rhyme, and to these he was able to gear the homely, kindly thoughts and feelings and memories that the mass of the Americans hold in the recesses of their minds. He was common in the good sense of being more or less universal, but he was a very uncommon man. He could not have written "L'Allegro," but neither could MILTON have written "Over the Hill to the Poorhouse" or "Betsy and I Are Out." CARLETON far outsold MILTON in his day and generation, and that was natural, for CARLETON, though a much worse poet, was a much better fellow, though perhaps no better man. His verse was no great things in art, but strong in nature, and the human feelings that he managed to get into it were real valuables, sweet, uplifting, and consoling.

His remarkable qualities and powers as a man appeared in other things besides his verses. He was a very acceptable speaker and a frequent lecturer, and had in speaking the same power to reach the hearts of simple people that he showed in his verses. He loved the country and all its scenes and incidents and had a true farmer heart. And because of the love that was in him, of nature, of people, he was probably a truer poet than qualified critics will ever admit, or than will ever be discovered except by the audiences that heard him talk and that half-million and more of readers who bought his books, and the millions who read them.

A good man, who did what was in him to do, and bettered many, many people by his doing of it.

One-time Reviewing

WRITING tends more and more to become a money-making trade and only the independent who are willing to starve or the fortunate for whose bodily needs Destiny provides can afford to make an art of it. The mass of stuff is thrown in bulk upon a much-enduring public, and they must sift nourishment from chaff just as they do among the patent breakfast foods which may also be an invention of Destiny to pave the way for men who do not need any breakfast at all.

The young critic who enters the field with an idea that it is his vocation to weed the good from the bad soon desists and takes to telling quite simply what he likes and why he likes it. The task of finding out futilities he leaves to the public itself.

If we think of this tendency as wholly modern it is interesting to go back to the recently published literary reviews of THACKERAY and note the difference in his manners in 1837 and 1844. Does the difference lie, not in the world's age, but in the age of the reviewers? Young, vigorous, and boisterous, the reviewer is full of hope that his taste may somewhat stem the tide of product. It takes just about ten years of effort for him to realize how tiny and ineffectual a thing is one mind and hand wielding one pen. SAINTE-BEUVE indeed helped form a standard for one age; MATTHEW ARNOLD did a little for English letters. But, in the main, one mind is just one mind buzzing among a myriad minds, and as unable to direct their course as any one gnat would be to lead a swarm of gnats out to sea.

In 1844 THACKERAY, then about thirty-four years old, begins his summing-up of the year's box of novels by saying: "In our hot youth, when WILL THE FOURTH was King, it was the fashion of many young and ardent geniuses, who contributed their share of high spirits to this magazine, to belabor with unmerciful ridicule almost all the writers of this country of England; to sneer at their scholarship; to question their talents; to shout with fierce laughter over their faults, historical, poetical, grammatical, and sentimental; and thence to leave the reader to deduce our (the critic's) immeasurable superiority."

He gives then the rather pretty simile of the rustic boy who flings stones at the blackbirds on the grounds that the music is bad and that they ruin the wheat crop; and yet, says THACKERAY, if the boy himself gets into the hedge and sings, he will make a wretched business of the music, and the dullest swains of the village will laugh egregiously at his music. Moreover, he adds, in the long apology he makes in 1844 for the exceedingly humane and laudatory notice he intends to give to the year's novels, with age the critic grows "fat and peaceful."

Age means, doubtless, a receding of vigor; and, moreover—and here THACKERAY really touches the heart of much gentleness—"I saw Morgan Rattler going home with a wooden horse for his little son. Men and fathers we can assault men and fathers no more."

How entirely at odds is this point of view from THACKERAY'S in the year 1837 we can see by turning to his notices of the novels of that year. He opens fire that year with a novel by a Mrs. TROLLOPE called *The Vicar of Wrexhill*, which he compares with the books of certain Roman Catholic theologians as "so ingeniously obscene as to render them quite dangerous for common eyes." "There are sins," says THACKERAY, "of which it is better not to speak at all, but our fair moralist (the authoress) has no such squeamishness. . . . That torrent of slang and oaths, O Nymph! falls ill from thy lips, which never should open but for a soft word or smile; that accurate description of vice, sweet orator (tress or trix!) only shows that thou thyself art but too well acquainted with scenes which thy pure eyes should never have beheld." "There can be little doubt as to the cleverness of this novel," he continues, "but coming from a woman's pen it is most odiously and disgustingly indecent."

In the main, THACKERAY'S chief criticism of the volume is, "Oh that women would make puddings and mend stockings." Doubtless a very popular view of the object for which half the race was created.

But THACKERAY in his youth was not much more lenient to those of his own sex who failed to win his affection. In 1837 it fell to him to review BULWER'S *Ernest Maltravers*. Of BULWER he says: "He excels in the *genre* of *Paul de Kock* and is always striving after the style of PLATO. . . . What a number of sparkling magazine papers, what an outpouring of fun and satire might we have had from NEDDY BULWER had he not thought fit to turn moralist, metaphysician, politician, poet, and be EDWARD HEAVEN-KNOWS-WHAT BULWER, Esquire and M. P., a dandy, a politician, and a spouter at Radical meetings. We speak feelingly, for we knew the youth at Trinity Hall. . . . He has thrown away the better part of himself—his great inclination for the Low—namely, if he would but leave off scents for his handkerchief and oil for his hair; if he would but confine himself to three clean shirts a week, a couple of coats in a year, a beefsteak and onions for dinner, his beaker a pewter pot, his carpet a sanded floor, how much might be made of him yet! An occasional pot of porter too much—a black eye in a tap-room fight with a carman—a night in the watch-house—or a surfeit produced by Welsh rabbit and gin and beer might, perhaps, redden his fair face and swell his slim waist; but the mental improvement which he would acquire under such treatment—the intellectual pluck and vigor which he would attain by the stout diet—the manly sports and conversations in which he would join at the Coal Hole or The Widow's are far better for him than the feeble fribble at the Reform Club."

It is criticism such as this published in 1837 that makes one question whether indeed the world does grow old. Would the hardiest young reviewer to-day dare take away the personal character of a woman whose book he did not like in so candid and frank a manner? The writer of *Three Weeks* did, perhaps, lose some social prestige in certain circles, but we remember no review that insisted that her book was the outcome of a personal experience. Nor would we dare in quite so open a manner take away the character of a former school friend because we objected to his politics.

The present-day reviewing lacks the space and the leisure of the reviewing of eight and nine decades ago, and its manner is less robust and straight from the shoulder. Our worst rebuke to a writer to-day is silence—"a conspiracy of silence"—though there are times when even undue enthusiasm will kill a book. In the main, we leave the public to decide what it will take and leave, and reviewing is largely admitted to be an expression of personal taste and tradition. Those who follow HENNEQUIN'S scientific method of relating the product to the society in which it grew and the soil and climate that acted upon it are few and accepted by the few.

It is, whether young or old, a world of co-operation and social backing, of Celtic Revivals and Authors' Societies, of National Poetry Associations and Institutes of Social Sciences; and the best way to have a book reviewed is to belong to the largest and most influential of these co-operative organizations.

Correspondence

THE NEGRO AND HIS CHANCE

GREENVILLE, S. C., *December, 1912.*

To the Editor of Harper's Weekly:

SIR,—Widely misleading is an article in the November number of the *Century* by Booker T. Washington, disguised under the title, "Is the Negro Having a Fair Chance," and being a panegyric on the steady advance of the negroes of the South toward social equality with the whites, as witnessed by certain recent economic triumphs—insidiously misleading in that the whole truth is not told, the essential detail held back. To show this of a single instance will show the fallacy of the whole article.

"The professional man who is making the greatest success in the South is the negro doctor, and I should include the pharmacists and dentists with the physicians and surgeons. Except in a few cities, white doctors are always willing to consult with negro doctors."

It will be noted that the triumphal assertion here is not that there are negro "doctors" in the South, but the alleged recognition of them by white "doctors," a long step by the negro toward social equality with the white man and marriage with the white man's daughters. That Washington knows the reason the negro physicians scattered thinly over the South seem to make a living I do not charge because that reason is evidence squarely against his pretensions, but that he knows that reason he shows where he incautiously exposes it further in the same column in relation to the negro pharmacists.

"Again, the very fact that a negro cannot buy soda-water in a white drug-store makes an opportunity for the colored drug-store, which often becomes a sort of social center for the colored population."

While admitting here that a negro drug-store may maintain itself in the South only because negroes are denied service in white drug-stores, Washington does not state the fact that follows naturally his admission that a negro drug-store becomes a sort of social center for the colored population. That fact is, wherever in a Southern city a negro drug-store—or other store kept by negroes—is established, immediately the value, for sale or rent, of all other real estate in that neighborhood is chilled, for the very reason that that negro store becomes a rendezvous for idle and perhaps dangerous negroes, and the white people avoid that neighborhood like a plague-stricken area.

The old-time planter-physician of the South—usually out of old Jefferson Medical College of Philadelphia—was himself served of a negro body-servant, and he made no difference between white and black in his practice. Equipped like a heavy dragoon with boots and spurs, cloak, and saddle-bags, he rode one of his several saddle-horses twenty-five miles as readily to minister to some suffering old black crone in the "quarters" of a plantation as to attend the gracious lady of the "Bighouse" thereof, but the marked and growing tendency of the younger school of medicine of the South is to avert its dainty white nose from the foul body of a diseased negro; and that there are professional tooth-jerkers among the negroes of the South is due to the increasing indisposition of Southern dentists to put their scientific white fingers into black mouths. The fact is, where there is a negro physician to relieve white physicians from calls from negroes that appeal to their pity, Southern physicians, as a rule, practice none for negroes, and this may be what Washington calls "willing to consult with the negro doctors."

Consider the case of the negro barber. There are barber shops in the South operated by negro barbers, for the barbering of negro bucks and dandies only. About twenty-five years ago appeared the white barber in the South, and wherever he appeared the negro barber—envied of all his people for his close association with the higher people—to earn his bread found himself forced to the degradation and shame of serving professionally only men of his own race, whom he had learned to despise from his long exclusive service of men of the higher race. Also, since the advent of those shoe-repairing shops equipped with electric-power machines, the negro shoe-repairer finds his customers limited to persons of his own race, and those steam laundries that advertise "For white people only" are bringing more and more negro washer-women, to make a living for their able-bodied husbands and paramours, to wash the clothes of the colored aristocracy, an ignominy they would never have stooped to so long as they were permitted to wash for white people. Washington nowhere in that article avails himself of the opportunity to state that there is an increasing number of places of business in the South that have separate entrances for the two races, that the sign "No colored people admitted," or the more pointed adaptation from the Northern winter resident in the South, "Coons keep out," is becoming more and more noticeable, and that in the cities of the South there are dry-goods and millinery stores where a negro woman would never dare show her face. An occasional white face may be seen even among the noisy shiner boys in Southern cities now. Negroes still polish white men's shoes, for there are not yet enough white shiners to handle all the white patronage, but never a buck-negro would have the recklessness to propose to a white shoe-shiner to polish his shoes; the nearest he can come to equal service with the white man is to have his shoes shined by a negro who also shines shoes for white men.

In the old days not only plantation mansions but city residences had servants' houses—one or several—close in the rear, but nowadays a white man hardly ever tolerates them. A Southern-born even as late as in the first decade and a half following the war may have spent his childhood in a back-yard with many negro children, and have his mother thorough-curry his scalp every night with a fine-toothed comb, shedding the quarry—certain penalty of playing with the darkies—down upon a sheet of paper where he thought it great fun to crack them with his thumb nail, but nowadays hardly ever a white man will tolerate a negro living on his home premises. The servants' houses have been torn away from the fine old places, or converted into stables or garages, and the modern residences have no servants' quarters of any kind. Even where a negro cook or nursemaid or house girl is employed—and more and more the lady and her daughters are finding it easier to do their own housework than bother with negro servants—she must keep her home at a respectful distance, and she is expected to leave the premises every day just as soon as her work is done. In the country the old slave quarters rotted down so long ago as to leave not a trace, except the ranker growth of the cotton where the cabins stood, and the tenant-houses to-day are scattered widely over the plantation—even where white tenants have not displaced negro tenants, as is the tendency—all at a decent distance from the landlord's premises.

The fact is, the growing tendency of the Southern people is to withdraw further and further from the negroes and to abandon the negroes, for service and for employment, to negroes. The further and consequent fact is, there has grown up in the South a generation that has had little or no association with the negroes, and has no more feeling of affection for them than the people of Ohio or New England. Witness the recent bloody Atlanta race riot, and the later racial disturbances in Texas, in all of which it is said infuriated white men hunted down and slaughtered negroes, innocent or guilty without discrimination, as ruthlessly as ever in Illinois.

When it is remembered that there are in the South negro preachers, teachers, physicians, dentists, barbers, undertakers, pharmacists, trained nurses, dress-makers, etc., serving negro patrons only, because those negro patrons are denied such service of white persons, and that the trend is for white people to employ white skilled labor, abandoning the negro skilled labor to look for employment only to negroes—when all this is borne in mind it will readily appear that the whole burden of Washington's argument in that article falls.

I am, sir,

D. LEWIS DORROH.

Mr. Dorroh's view that the white and black people in the South are drifting more and more apart, is interesting and, we suppose, well founded. But we fail to find any particular in which his letter contradicts Dr. Washington's article. There is no suggestion in Dr. Washington's piece that the negro is advancing "toward social equality with the white man and marriage with the white man's daughters." On the contrary, he says: "The trouble in most parts of the United States is that mere social and legal privileges are confused with social intermingling." Again he says: "A large part of our racial troubles in the United States grow out of some attempt to pass and execute a law that will make and keep one man superior to another whether he is intrinsically superior or not." Perhaps Mr. Dorroh does not believe in such laws, but the tone of his letter suggests a conviction that it is necessary to the white man's welfare that the black man shall be kept under. If he holds to that view he is on the wrong track. His own showing that the black man is less closely associated with the white, and less dependent on him is not necessarily incompatible with Dr. Washington's opinion that on the whole the black man is getting along well in the South, and has a better chance there than anywhere else in the world.—EDITOR.

TOO MANY GUNS

NEW YORK, N. Y.

To the Editor of Harper's Weekly:

SIR,—A recent issue of HARPER'S WEEKLY contained an article, "The Cruises of the *Alliance*." I notice in the first paragraph, the first line, the *Alliance* appears as a 74-gun ship; it should read a 36-gun ship.

I am, sir,

WM. B. MEANY, M.D.

1

"Wimmin 'ain't got the mental balance what we men got, and until they git it they ain't fit ter vote"

2

"What do you mean by that, Mr. Henpeck?

3

"That woman has no balance?

4

"She may have to lean on the sterner sex at times,

5

"But she will always hold a lofty position."

6

"She may slip,

7

"But she will recover and make herself felt.

8

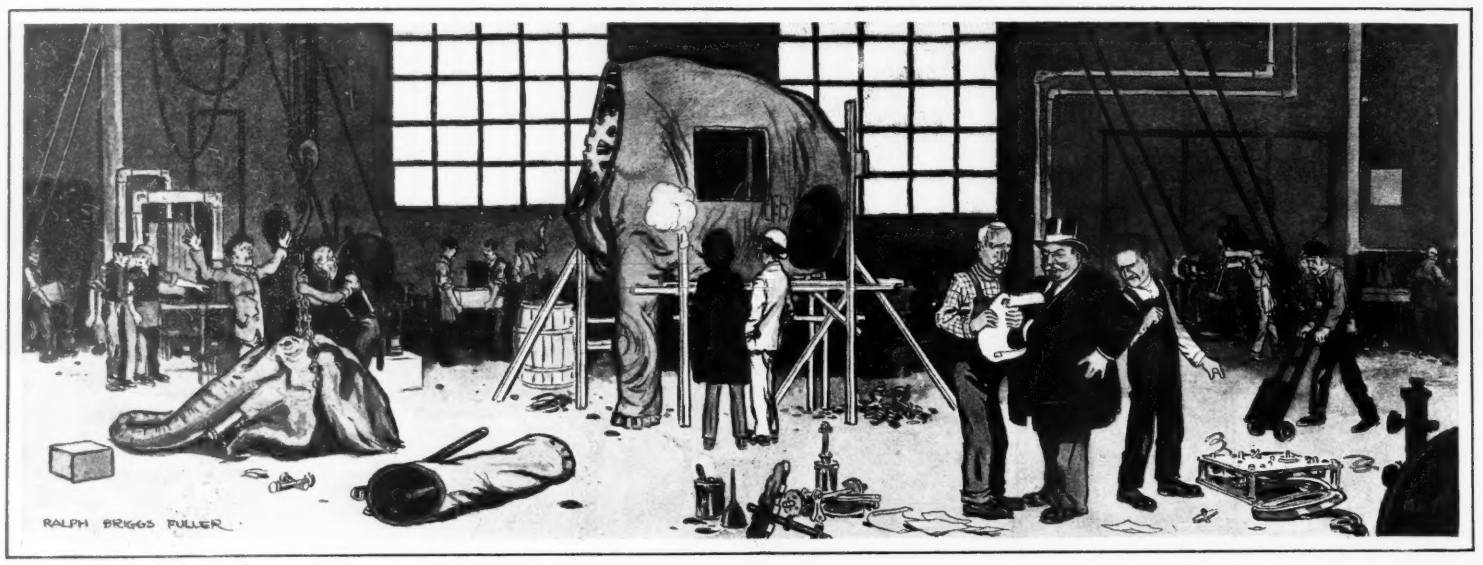
"Now, how about your argument—has she a right to vote?"

9

"Gee whiz! I reckon she has!"

MERE MAN AND THE SUFFRAGETTE

DRAWN BY E. W. KEMBLE



CAN THE ELEPHANT BE MENDED?

A Visit to the Factory where the Work of Restoring the Sadly Battered old Pachyderm is now in Progress

BY A. MAURICE LOW

WASHINGTON CORRESPONDENT FOR "HARPER'S WEEKLY"

"IF you don't mind I'll go along with you and see what progress they are making," I said to the large man with a luxuriant smile who had told me he must hurry away because he had to go to the factory and find out how things were going.

"I don't know whether they would care to have you," he replied, somewhat dubiously.

"But aren't you the boss of the works?" I asked.

"Not by—not by a few millions," he answered, thoughtfully. "You see, I'm just looking after things for a month or two until the new proprietor takes charge. He's gone off on a holiday, lucky man, and I can't say I envy him the job ahead—but they think I ought to help them out in trying to patch up the poor old beast."

"Who's 'they'?" I asked, in my eagerness probably making the shade of the late Lindley Murray wince.

"Some of the people who had a mortgage on the elephant, some who would like to, and a lot of experts who had to call in to tell us what we are to do. But never mind; they are all good-natured and we'll chance it, so come along."

And we went.

The factory was a huge place with machines of all kinds and men at work over them, and right in the middle of the floor a space had been cleared away and there was the elephant, or, rather, what was left of him. They had taken off his head and he had only one leg, and in place of the other three he was propped up on scaffolding. There was no tail. Afterward they told me it had been lost and no one had been able to fit out the beast with a new one even for temporary purposes. I felt sorry for the poor thing.

All around us the place was littered with parts of the elephant. I never supposed there were so many things inside an elephant. I can't begin to describe them. There were wheels and springs and valves and I don't know what else, but I noticed the machinery all seemed to be rusty. A little man with pompadour hair and a nervous, excited manner had just thrown down in disgust a complicated arrangement which I heard some one say was the tariff, which is the heart of the elephant's system.

"Bah!" said the little man with the pompadour hair as he kicked the thing away from him; "old-fashioned; out of date; hasn't got a single one of the modern improvements. I could make a better one with one hand and my eyes closed," he ended, with withering sarcasm.

"You don't know what you are talking about," angrily retorted an elderly man who had been examining the elephant's only leg. The man was gray-haired and had a white mustache, and as his front somewhat resembled the transverse section of an elephant, the exertion of bending over and his anger made his face very red. "Look at this," he shouted, triumphantly, pointing to the elephant's leg. "I tell you he stands pat on that just as sound as ever," and he glared at the little man with the pompadour hair.

"Oh, you give me a pain," the little man answered, inelegantly.

"We'll cure that in a jiffy," one of the group remarked, briskly. "Homeopathic treatment, eh? You've got a pain because you wouldn't take Payne's treatment," and he laughed to show that it was a joke.

The working-men laughed, too. I don't think they understood the joke, but as they were paid by the hour laughing came out of the boss's time.

The man with the gray hair and the white mustache evidently had no sense of humor. "All silly nonsense," he said, showing that he was still angry. "You took off three perfectly good stand-pat legs and put on in place of them a referendum which you knew didn't fit; a recall"—and he shot a furious glance at the little man with the pompadour hair—"which you had to admit was an experiment; and an initiative, which the manufacturer refused to guarantee because he told you it had never been used before on an elephant, although he thought it might work all right with cats and dogs or a mule and that sort of truck—but an elephant's a different kind of a proposition. Now I tell you what"—and he waved his hands and talked as I've heard men speak in the House of Representatives when they are making tariff speeches—"you let me call in Hill of Connecticut and Dalzell of Pennsylvania and Longworth of Ohio and our Uncle Joe and Smoot of Utah and Gallinger of New Hampshire—all men who know their business and are handy with their tools—yes, and we'd better have Aldrich of Rhode Island and Hale of Maine as consulting experts, and I'll promise to put the old elephant in such first-class condition that he'll win the first prize the next time we have a parade."

I suppose he would have kept on talking, but just then the derrick swung around and we had to move out of the way to make room while the elephant's head, which had been given an overhauling in the regulating department, was lowered into position. While this was being done I took a closer view of the elephant, and I saw that he had a big dent in his side.

"Do you think he can be mended?" I asked a tall man.

"I don't know," he said, somewhat despondently, "but we'll have to see what can be done."

"How did it happen?"

"The elephant challenged the donkey to a race and the donkey kicked him in the ribs."

"Did it hurt?"

"Well, I don't think it was exactly pleasant, but that wasn't the worst. After the race was fairly started a bull moose broke loose and went mad and butted in on the course, and between the two of them the poor beast got pretty badly smashed up. But there's one thing to compensate: we broke the bellows of the bellowing bull moose and he won't worry us any more. But let's hear what the report is on the head. I am curious to know if they found anything wrong."

So we walked round to where the rest of the party was gathered. "Gentlemen," said the manager of the factory, "there's nothing the matter with the head. My men have taken it to pieces and everything is all right. We've adjusted the regulator and put in new parts that were a bit worn, and now I'll guarantee it to give you excellent service for the next four years."

When the manager said this I noticed that the man with the pleasant smile who had brought me to the factory looked very well pleased, and he said:

"I think the proper thing would be to get a new head."

But the others protested, and one, a tallish man with brown hair and a brown mustache flecked with gray, said:

"It isn't the head I am worried about so much as it is the constitution. Has the elephant still got a sound constitution after the way he was kicked about during the last few months?" he anxiously inquired of the manager.

"I thought at one time, sir," the manager replied, "when the bull moose went charging against the elephant, that his constitution might have been permanently injured, but he comes from too good stock to be hurt by a bellowing bull moose. We took the constitution out and carefully examined it, and it's just as sound as it ever was. Nothing to fear there."

I saw a look in the elephant's eye that said: "Come here; I want to talk to you." Now the elephant, dear reader, in case you don't know, is a peculiar beast, quite unlike any other you see in the zoo or in the wilds of Africa from a private car when you are writing adventures at a dollar and fourteen cents a word for the uplift of the masses and the confusion of all faunal naturalists and other fakirs. You can unscrew the head and disconnect the tail and take off the legs and tinker round generally, and still he doesn't seem to be much the worse. Here were parts of my elephant all over the place, and yet he was able to whisper to me: "They needn't worry. I'm going to come out of this all right; and when I do—" There was a baleful gleam in the elephant's eye.

Just then there came bustling in a small man with a black slouch hat and a cigar stuck in the corner of his mouth, raking upward. The rest of the party called him "Uncle Joe" and showed they were glad to see him—that is, all except the little man with the pompadour hair and a few others who kept to themselves off on one side. The little man with the pompadour hair glared at the other little man whom they called Uncle Joe, and he sent back as good as he received. I could see these two men were not friends, and they reminded me of a couple of bantams ready to have a fight; but the man whom they called Uncle Joe took his cigar out of his mouth, spat with deliberation and precision, shoved his hat back on his head, and said, genially:

"Well, boys, what about the darned old thing?"

I thought the big man with the pleasant smile, and the dignified man who had been so anxious about the constitution, and the others would resent being called boys with this easy familiarity, but they laughed and said in chorus:

"Everything's coming along fine, Uncle Joe."

"The blazes it is!" he exploded, only he didn't say "blazes." Then he gave his hat a further push and struck out with his left hand and said with great earnestness:

"It's all damn nonsense, this thing of talking of sticking a couple of bull-moose legs on an elephant and giving it a populist-socialist-what-you-call-them sort-of-things tail, and thinking you'll have an elephant that 'll be good for anything. If those people over there"—and he shook his left fist in the direction of the little man with the pompadour hair and his group—"own any share in the elephant, I don't; and, boys," he added, with a laugh, "it ain't according to nature to stretch an elephant two ways at once and not expect to shake up his innards."

The little man with the pompadour hair pressed forward. "The people demand progressive—"

The man whom they called Uncle Joe wouldn't let him finish. "Bother your progressive policies!" he shouted, waving both hands in the air, only he didn't say "bother." "The elephant was perfectly sound in wind and limb until you fellows began to fool—"

"I say—" began his adversary, with great heat.

"And I don't care a whoop in Mars what you say," the other fired back; but here he was interrupted by the big man with the pleasant smile, who pulled out his watch and said:

"Well, gentlemen, this is all extremely interesting and very instructive, but I must go and play golf, so we'll resume the discussion at some other time; but I thank you for your loyalty and I am glad to see we are all so thoroughly in harmony."

As the party dispersed I went over to the elephant.

"Confidentially," I said to him, "as between man and man, do you really think you can be mended?"

The elephant looked from the big man with the pleasant smile to the little man with the pompadour hair and the other little man with the black slouch hat and the rest of them, and then very slowly his left eye dropped.

"I'm jiggered if I know," he said, with a yawn.

STAGING A FAIRY PLAY

What Happens Behind the Scenes at Performances of Barrie's Immortal "Peter Pan"

BY HOMER SAINT-GAUDENS

LISTEN to what J. M. Barrie, the one modern writer with fancy delicate enough to weave fairy gossamer into the frame of playland, has to say concerning this subject:

"The difference between a fairy play and a realistic one is that in the former all the characters are really children with a child's outlook on life. This applies to the so-called adults of the story as well as to the young people. Peel the beard off the fairy king and you will find the face of a child.

"The actors in a fairy play should feel that it is written by a child in deadly earnestness and that they are children playing it in the same spirit. The scenic artist is another child in league with them.

"In England the tendency is always to be too elaborate, to overact. This is particularly offensive in a fairy piece where all should be quick and spontaneous and should seem artless. A very natural desire of the actor is to 'get everything possible out of a line'—to squeeze it dry—to hit the audience a blow with it as from a hammer, instead of making a point lightly and passing on as if he were unaware that he had made a point. There are many tricks of the stage for increasing this emphasis and they are especially in favor to strengthen the degraded thing called 'the laugh,' which is one of the curses of the English stage. Every time an audience stops to applaud the illusion of the stage is lost and the actor has the hard task of creating it again. Don't force the laugh. An audience can enjoy itself without roaring, as the French know.

"In short, the cumulative effect of naturalness is the one thing to aim at. In a fairy play you may have many things to do that are not possible in real life, but you can conceive yourself in a world in which they are ordinary occurrences and act accordingly. Never do anything because there is an audience, but only and entirely because you think this is how the children in that fanciful world would do it.

"No doubt there should be a certain exaggeration in acting, but just as much as there is in stage scenery, which is exaggerated—not to be real, but to *seem* real."

On such advice as this Barrie's fairy play, the inimitable "Peter Pan," has been made again; for now the call of new generations has tempted forth Peter Pan so that he may be seen by thousands of children, aged from five to fifty years, in the cities, large and small, of this our land.

The making has been fun. Yes, fun—even in the face of that word "piffle" which so many veterans of actorland undoubtedly would utter at the suggestion that rehearsals could be anything but a hopeless grind. Poor men! It may not be fun to rehearse ordinary plays, but that is all they know about it. A *fairy* play is quite another problem: it means to place the petals on the wild flowers; to mingle reality with melodrama, poetry with the grotesque; to ignore all rules and to discover subtleties rising from subtleties; to achieve the self-consciousness of children and yet not to know it.

Think of it! Would not you children and perhaps your children and again perhaps your children's children like to follow such a fairy as Tinker Bell—whom you can see only as a dancing light; to go with her straight on till morning, when you would most certainly come to the Never-Never Land? There you would find Hollow Trees and Snow-Balls and Toad-Stools-Big-Enough-To-Sit-On and A-Lion-That-Lets-His-Tail-Be-Cut-Off and Friendly-Indians-With-War-Whoops-and-Fights and Wolves-That-Dare-Not Touch-You-If-You-Look-At-Them-Between-Your-Legs.

There also you would most surely encounter a Pirate Crew and its Pirate Ship. It's a true Pirate Crew that sings:

"Yo ho! Yo ho! A pirate's life,
The flag of skull and bones,
A merry hour—a hempen rope,
And hey! for Davy Jones."

Indeed, those ferocious sea dogs are in the habit of making their captives walk the plank; especially when under the eye of their leader, Captain Hook, a mad-minded man who thirsts for the blood of Peter Pan, though terribly afraid of the crocodile that fortunately swallowed a clock whose ticking warns Captain Hook of his approach. Captain Hook's antipathy to Peter dates from the time when Peter cut off his hand and flung it to this crocodile. That, naturally, gave the crocodile a taste for Captain Hook, a most unappreciated compliment; so that now from land to land and from sea to sea this amphibious reptile follows the ship, licking his lips for the rest of him. He—that is, Captain Hook—is called a Hook because of the Hook he carries at the end of his right arm in place of his erstwhile hand.

Think of the unalloyed joy, the sense of triumph it would give you, to beat one of these pirates over the head with a wooden sword each evening, or maybe to snarl your fingers in that pirate's hair. However, while speaking of hair, remember it is only the hair of a mear-smear pirate that can be reached in so casual a manner. The hair of Captain Hook is not by any means to be disarranged by other vulgar children. He is played by Mr. R. Peyton-Carter, who is also Father "Darling" in the first act. During one of the earlier rehearsals, when, in accordance with the stage directions, he lifted Michael, the youngest, upon his shoulders, that valiant child seized what was left of the growth on the back of the comedian's head with a gratuitous energy that elicited from the height of six feet two a sad voice which muttered: "Heavens, no toupee in this act!"

But, most of all, imagine the excitement which would be yours upon having fairy dust blown on you so that you might fly, just wiggle your shoulders and let go. It's the most delightful of sport, this learning to fly; very like what the young robins do in the apple orchard every spring. Because when an exceedingly big nightly pirate named Adolph makes passes across your shoulder-blades and calls in an oversea voice to a *Deus ex Machina* known as Gustave, hidden in the shadowland sixty feet above you, your perturbation and heart flutterings and vain efforts to fly and yet to avert the awful moment, and your silly mingling of glee and terror when the expected happens so unexpectedly, are astonishingly like what we have all seen in other fledglings on a day in the young summer. That flight once accomplished, however, a sense of most delicious freedom fills each and every child; so that even Michael, the littlest, when the first real trip in the air was over, could look back at the window just passed through and exclaim: "Why, it's fun! Let's do it again."

Of course Miss Maude Adams, who is the producer as well as the "star" of "Peter Pan," is in deepest sympathy with Mr. Barrie in desiring that all the members of her company play this fairy play as they feel it and, what is more, as they would feel it as children. For example, when little Liza, who plays the child housemaid, one day called the pirates "parrots," the alteration remained. Nor was she alone in discovering that her deviations from the limits of the sacred manuscript would be adopted on the spot if they fitted and illuminated the plot. Poor John Darling, who is Eddie Wilson, first fell asleep against a tree at the dress rehearsal. It was very late indeed for playtime. Promptly the edict went forth that each night he must fall asleep against that same tree at the same time and in the same manner. Then soon after, failing to learn by experience, while impersonating the stern of the "Crock," he could not resist the temptation to insert his leg into the tail of that sea-green saurian monster and give it a most discommoding flip as he left the stage. Apologies were useless. That flip, so the law was declared, must be repeated every night. Once also Barney Silvers, as the ostrich, gently supported his shy head on a handy branch while he meditated in his tummy, where play ostriches' brains are always located, on the vagaries of the Lost Boys. Thus he will meditate throughout the season. Again, Wallace Jackson, as Starkey, when told to fall overboard, displayed a childlike fear of dropping somewhat more than two hundred pounds of himself upon a suspiciously slender mattress; the which same childlike fear was gloriously incongruous as it percolated through the medium of his awesome piratical make-up. He was promptly told to continue to exhibit that fear each night.

"In the Never-Never Land you would most surely encounter a Pirate Crew and its Pirate Ship"

"The star is in deepest sympathy with Mr. Barrie in desiring that all the members of her company play this fairy play as they feel it"

So it has come about that we all continue to address each other by the characters we represent. We are Captain Hook, Wendy, Tiger Lily, or Michael, whether in the theater or the sleeping-car "on the road." I alone am the exception that makes this fact prove the rule that our work is a game for us. I have no name; therefore they have dubbed me a "Doodle-Doo," which most certainly I am not. And so it is that such a happy, extraordinary state of affairs in a theatrical troupe has come about, as I have endeavored to explain, because we are playing in a fairy play.

"I'm Youth, eternal Youth!" cries Peter Pan. He is a boy of the woods and the morning wild flowers. Cynicism, injustice, are not of his world. He has no mind to show us our cruelties, our follies, or our greeds. "I don't want to be President. I want always to be a little boy and have fun," is his only gospel—the gospel of Peter **Pan**theism. And this spirit of hopeful interest in all about him, this discovery of romance in every workaday object, each evening is brought forth anew by the woman who creates him, a woman whose every thought is filled with the upspringing heart of a true artist, which must always be the heart of youth.

At times the zeal of our play must be tempered with the gentleness of stern reality. For example, the Wolves are just other children who in each city come fresh from unknown sidewalks to play with us. When, therefore, one evening not so long ago they thrust their awe-struck noses into the Never-Never-Land of the playhouse, only to be set upon by our own particular brand of most bloodthirsty pirates, they fled down the alley still pursued by one of the crew, Blackman, otherwise known as the stage director's assistant, who, seeing his nightly responsibility about to escape him, gave chase even to the white street lights, all forgetful of the terrors of his make-up, of the burnt cork on his face, and of the sheepskin cloak on his back.

Yet, for the most part, do all children learn with astonishing facility the finger-boards of Fairyland. Indeed, the very next day, after the tragedy just related, Carter, the most fearful of us all, was asked

on the street to buy a paper from an unrecognizing youngster.

"Go away," that gentleman exclaimed, peevishly, for he was in a terrible hurry.

His frown proved the revelation.

"Aw, quit your kidding, Cap'n; I'm a wolf," cried the small voice. "Gimme a nickel."

Nor was that promising young Booth the exception to the rule. For when Mr. Carter related the incident to Sophie, who has charge of our wardrobe, she nodded her head knowingly.

"Lord bless me, they're worse than the principals!" she exclaimed. "Either their skins do not fit or the color or the length of their hair isn't right. Why, just yesterday evening, as I was taking his things off, one of them turns to me and remarks most hurt-like, 'Say, one of them Lost Boys got in my way this performance and I couldn't act.'"

But despite all such pleasures, our game would remain a sad failure if our audience contained even a single grown-up, a single person unable to enter the Land of Make-Believe with us from the very beginning. Not for an instant may you permit yourself to imagine even one adult on the premises. Within the four walls of our theater it is only a matter of size that distinguishes this individual from that. In no way can the bigger children outstrip the littler ones. In no way can they command a healthier respect for their understanding of the rules of the game. As an instance, in Act III. Hook shows a certain bottle to Smee. Thereat Smee remarks, "Poison." A few moments later Hook empties the contents into Peter's medicine. For some time Smee had been in the habit of smothering the word poison into an awe-struck whisper. But the other evening, in the midst of the fearful silence which inevitably reigns while Hook steals into Peter's room below ground and pours his liquid into Peter's glass, there rose a remarkably distinct young voice from the audience:

"Daddy, what's that man doing?"

Now you ought to hear Smee roar out that word "Poison." Surely not a newspaper of that child's city could boast of a keener critic—or a more constructive one.

Moreover, fortunately for us, that critical sense never interferes with the ingenuousness of these children as it would with grown-ups. Never for an instant does it lock the gates of the Land of Fancy. Did not Tiger Lily's chief Indian brave "Panther" stub his toe on a root while running across the stage the other night and fall most excruciatingly flat? He did. Yet by holding his bruised ear firmly to the ground the audience was made to feel sure that it was in the game and that he was listening for the footsteps of pirates, just as all other good story-book Indians have done since time immemorial. Did not Captain Hook fall off the steps when he was about to quell his mutinous crew not long ago? Did not the steps collapse under him the very next evening? Did not the play pirates nearly expire while trying to maintain their scowl? Yet did not the audience believe the play pirate captains always acted like that when on the point of asserting their dignity or preserving discipline?

Could all this be true if we playhouse children did not believe in fairies? Of course we believe. Why, only the other day Liza—the littlest—expressed our sentiments most exactly. When I arrived at the theater on the top of a load of pine branches that I had helped to cut out in the country for use in our last scene, the house among the tree-tops, Liza was standing at the stage door looking most perplexed. "What particular Leprechaun has been teasing you?" I inquired, for Liza is Irish. "Mr. Doodle-Doo," she asked in reply, "do you suppose all those baby trees you've chopped down mind dying just so the fairies can sleep in their tops for one night?"

And could all this be true if the audience didn't believe also?

Do they believe in fairies? Peter Pan asks them that question when it is his only hope to save the life of Tinker Bell, who can be seen only as a dancing light. The answer is unanimous. They do.

Moreover, they do all through the play. Watch the littler children wriggle from their seats and move step by step down the aisle during the performance. What are rules and regulations to ushers at "Peter Pan"? Any brute who is thinking of such things at such a time ought to be ashamed of the candles on his next birthday cake.

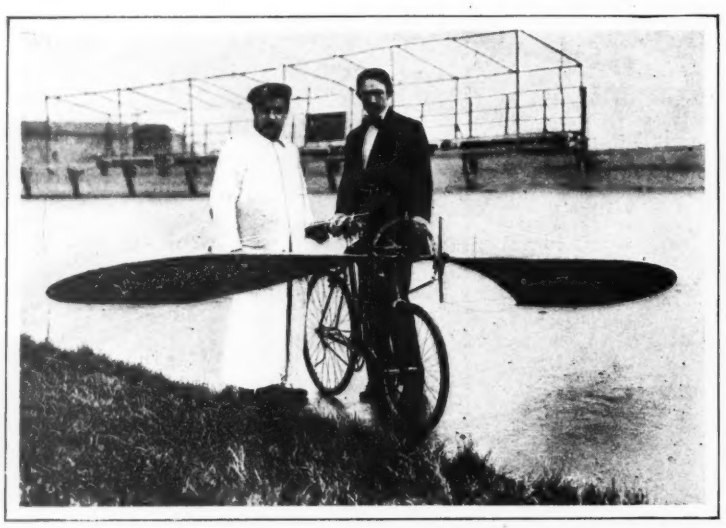
Finally, oh, you pitiless seekers after a moral, have the audience learned anything? Which teaches us most, a sermon or the wild flowers?

Not so long ago, when the curtain rose on Peter Pan's little house among the tree-tops in the last scene of the last act, clear above the soft violin there came to us the high-pitched voice of a wisp of a child addressing a much-bejeweled mother:

"Mamma, is that Peter's hotel?"

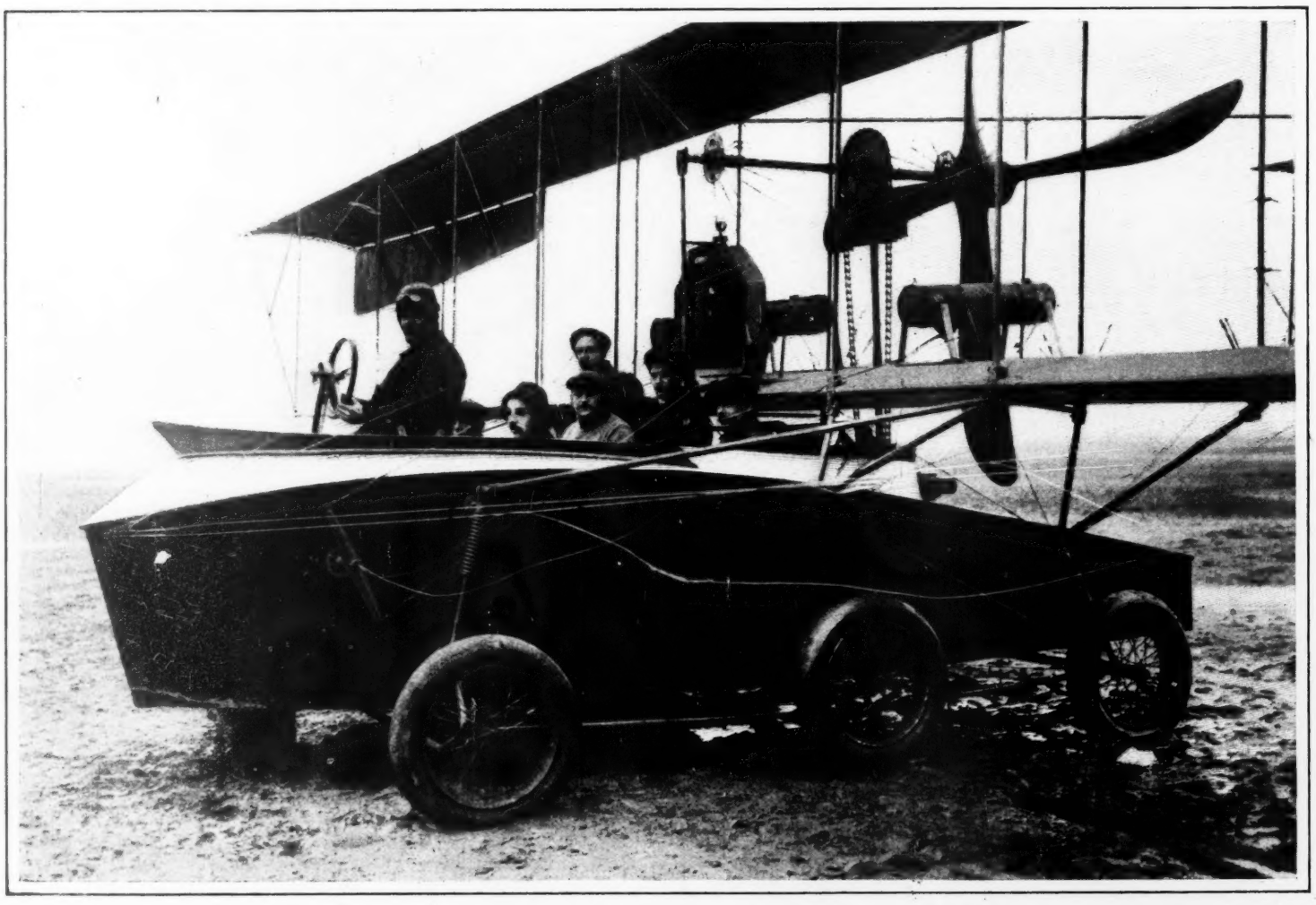
Poor kiddie! Where was the word "Home" in her vocabulary?

I wonder if either of those two learned anything?



M. Didier's flying bicycle, which rises to the height of several feet

The brothers Moretti, of Milan, on their tandem hydrocycle

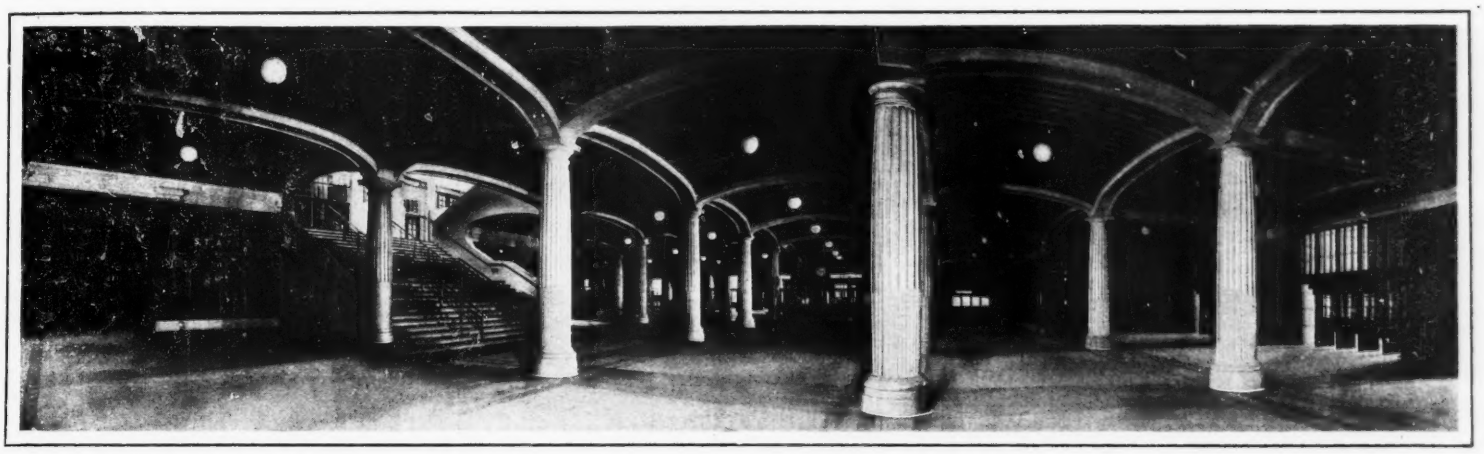


A six-passenger machine, the "Voisin," which can be manipulated in the air or on the water

STRANGE AIR AND SEA CRAFT FROM EUROPE

CHICAGO AS A RAILROAD CENTER

BY THADDEUS S. DAYTON



The lobby of one of Chicago's new passenger terminals

CHI-KAU-GOU, the "Great Crossing Place," the Indians called the locality where now spreads a city of more than two million inhabitants, the biggest railroad center in all the world. On one side of the narrow strip of land was the end of a river flowing Gulfward; on the other the expanse of Lake Michigan shimmered in the sun. This portage was the most important in North America. Its portals were the gateways to limitless leagues of travel.

The Indians vanished like the mists from the sluggish rivers. The white men came, built their stronghold, and founded their city. But long before there was a city the explorer La Salle predicted that the "Great Crossing Place" would one day become "the gate of empire, the seat of commerce."

A century and a half after La Salle died the first railroad out of Chicago was planned on paper. It was not until a decade later that it was transmuted into steel. In 1847 it ran hesitantly for ten miles, from the Chicago River to the Des Plaines, and there it stopped. It was the only bit of railroad for hundreds of miles. Its solitary engine had been brought by a sailing vessel from New York State. To-day Chicago is the terminus of twenty-seven great trunk lines, with an aggregate length of 83,000 miles. Besides these there are twelve branches or tributary lines of railroad which bring the total mileage of rails of which Chicago is the center up to a figure nearly four times the circumference of the globe. With these bands of steel the city is linked with all the principal ports of the United States, with the wheat and corn fields of the West and Northwest, with the lumber and iron regions of the North, and with the cotton fields of the South. An incalculable flood of all the things men toil for flows unceasingly into Chicago's lap and thence is distributed to every corner of America and the world.

Among the tales of cities the story of Chicago's rise as a railroad center and the fulfilment of La Salle's prediction that it would one day become the gate of empire and the seat of a vast commerce is the most marvelous of all. There are men still living who recall how the president of Chicago's first railroad used to climb to the second story of his depot in the morning and with a telescope watch for the smoke of his train creeping over the ten miles of prairie. To-day the cloud of smoke that rises from the thousands of locomotives hurrying to and fro is so dense that civic bodies are seeking means for its abatement.

The first railroad that Chicago knew was called the Galena & Chicago Union. It was chartered in 1835, but no track was laid until twelve years later. In 1848 it was completed. Its strap rails were second-hand; so was its single locomotive. It was made of cast-offs from the Buffalo & Attica Railway. The first trip was made over its ten miles of length on November 20, 1848, and the only passengers were the stockholders and directors of the road. They were rather a rough-looking lot. Many of them wore their trousers tucked in their boot-tops, and flannel shirts outnumbered white ones.

On the return journey from the banks of the Des Plaines River the little train that was staggering over the rails caught up with a farmer who was hauling a load of wheat to Chicago. One of the directors had a brilliant idea. He commanded the driver of the locomotive to stop, and the train halted side by side with the sweating horses. There is no record what freight-rate the directors made on the shipment, but they induced the farmer to transfer his load of sacked grain to their passenger-car. The train proceeded, and the farmer with his empty wagon almost kept pace with it. This was the first grain ever carried by rail to what afterward became the largest grain market in the world. In that same year the first telegram reached Chicago.

That half-forgotten wagon-load of wheat was the forerunner of a mighty flood. About 300,000,000 bushels of grain come into Chicago every year now. More than 200,000,000 bushels are shipped out. The difference is turned into flour and other food products, and a good share of this also goes to feed the world outside Chicago.

The Galena & Chicago Union was the corner-stone of the Chicago & Northwestern system, which was organized in 1859. The early years of its existence were years of trouble and anxiety for its owners and those who had lent money to the road. It was desperately poor, and for a time could not pay the interest on its bonds. More than once its officers had to meet the road's payroll out of their own pockets. But mile by mile and year by year the road crept westward until it reached the Mississippi. It reached Council Bluffs, just across the Missouri from Omaha, on March 15, 1867. One train a day was run between Chicago and Council Bluffs. The distance was 489 miles and the time 28 hours.

The Illinois Central was incorporated in 1836, but construction was not commenced until 1852. The railroad builders had begun to realize that Chicago was indeed the gateway to an empire of incalculable richness. The Michigan Central and the Michigan Southern in 1852 were laying their rails in feverish haste, each seeking to be the first to reach the Western metropolis and give it an overland outlet to the Atlantic seaboard. The first track of the Illinois Central was laid from Chicago to Calumet to aid the entrance of the Michigan Central. That road and its rival both reached Chicago in the same year. The main line of the Illinois Central that runs due southward to Cairo, "down in Egypt," at the junction of the Ohio and the Mississippi, was completed in 1855. The Rock Island was the first to span the Mississippi with a bridge, in April, 1859.

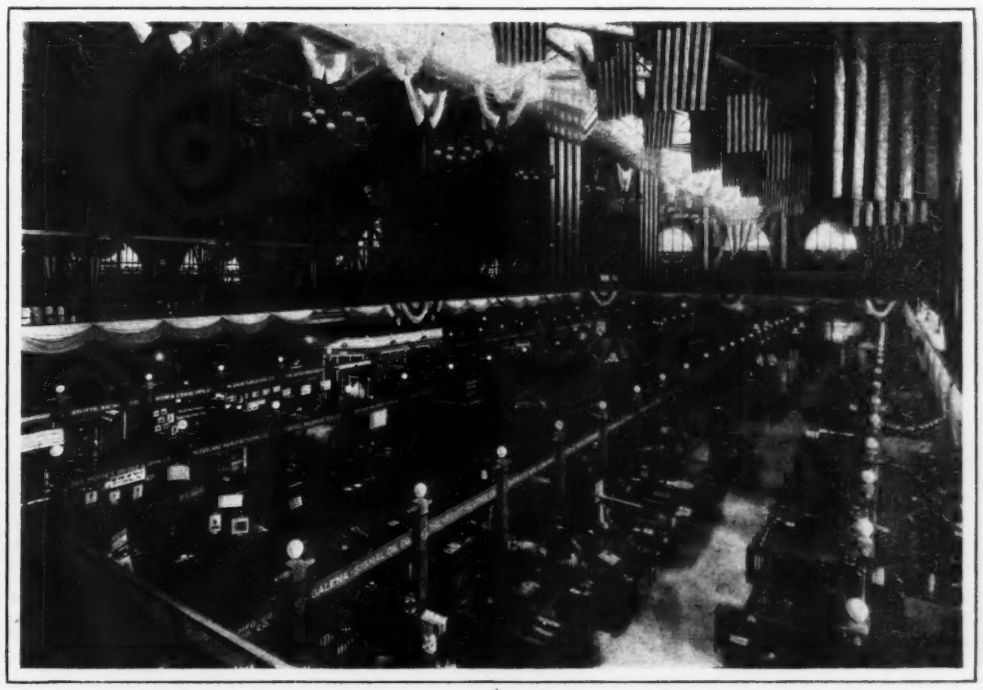
Such, in its briefest outline, is the story of Chicago's beginning as a railroad center. It was not until after the close of the Civil War that Chicago's possible greatness in that line began to be recognized outside by other citizens than her own.

Any approach to Chicago by rail gives even the least observant of travelers a distinct impression of its importance as a transportation center. Long before the city is more than a cloud on the distant horizon one sees from the car-window an ever-increasing number of trains moving near by and afar off over the dead level of the prairie. Some are swift passenger trains, others are ponderous freights, but all are hurrying with an air of energy. Especially is the western approach of Chicago noticeable for this. First one wheels past flocks of pleasant suburbs, with their green lawns and embowered homes. Then comes the fringe of the city where the houses are higher and stand in solid blocks. Then comes the belt of factories where the wheels rattle almost continuously over the switches and crossings. Then, all of a sudden, the maze of tracks that has spread out like a many-fingered hand narrows down, and the journey is ended.

From the east one used to glimpse over the sand-dunes the waters of the lake. Of late years, however, oil-refineries, steel-mills, and other vast industries have sprung up along the tracks and have transformed the waste places into sizable cities. An unbroken chain of them extends from some miles east of the Indiana line until all of them merge into the mass of Chicago itself.

But whether one comes from the east or west or north or south, every traveler has to change cars at Chicago if he is going beyond there. The terminals of the twenty-seven trunk lines are divided up among six huge passenger stations. The Central Station, at Park Row and [illegible] Street on the south side, is the place of ending [illegible] railroads. The Northwestern station is at W[illegible] and Clinton streets. The Dearborn Station, at Polk and Dearborn streets, accommodates six railroads; the Grand Central, at Fifth and Harrison, four; the La Salle Station, at Van Buren and La Salle streets, in the shadow of the famous Board of Trade, five; and the Union Station, on Canal Street, between Adams and Madison, five also.

Every traveler knows Chicago's passenger stations. Few are acquainted with the city's freight terminals. Yet it is from the latter that Chicago's pre-eminence as a railroad center arises. It is not from the passengers it carries in its glistening, brass-bound trains that a railroad derives the bulk of its revenues. The more miles of dingy, heavily loaded freight-cars a railroad hauls about, the more money it makes. The passenger business of a line is usually handled from a single structure in each city. But with the inanimate or the dumb freight it is a different matter. There have to be many places where such merchandise can be received or unloaded for delivery. Large manufacturing plants have freight stations and sidings that are larger than those of many a small but proud city. Live-stock in Chicago is a business by itself. So is coal. So are wheat and corn and oats. Chicago, as



A general view of the annual exhibition of railway appliances held in Chicago

the seat of a vast commerce, has innumerable freight stations. To some the commodities and products of the Western empire of which the city is the gateway come by water, down the lake or by the canal from the rivers. To others freight-cars by the thousands hurry each day. In these freight stations work never stops. If it did every part of America would feel it in a week and all the world would begin to take notice in a fortnight. For through Chicago's freight stations passes the food for many millions of human beings.

Take the matter of wheat, for instance. Chicago handles each year close to 30,000,000 bushels of wheat —not paper wheat, but the real thing that is ground and turned into bread. It controls the handling of many times that amount of wheat that it never sees. It sets the prices at which it shall be bought and sold. It is the greatest wheat mart in the world. Nearly 10,000,000 barrels of flour pass through Chicago every year, and more than 100,000,000 bushels of corn. These figures convey little meaning to one who has not seen the golden floods of grain pouring into one of the huge elevators by the side of a railroad. Even then the phrase "a million bushels" of wheat or of corn is almost beyond visualization.

It is the same way with cattle. A farmer who owns ten head of horned cattle counts himself passing well-to-do. Nearly 3,500,000 cattle are received in Chicago every year. They represent the herds of tens of thousands of farmers and ranchmen. So with hogs. Chicago kills and packs nearly 6,000,000 hogs a year. It is the transporting of these almost inconceivable quantities of food to Chicago from the vast plains of the West and their conversion into more portable, eatable forms that have raised Chicago to the pinnacle in the railroad world where she sits alone as a city.

There is about as much railroad activity concentrated in the Chicago Stock Yards as anywhere in the city. The area of the yards is one square mile—640 acres. There are 250 miles of railroad tracks in the yards. Each week, on the average, 270 trains with 9,600 heavily loaded cars bring in live-stock. Each train travels an average of 400 miles. Nearly 1,100 locomotives are used in handling this freight. It takes an army of 6,500 men for the engine and train crews of these shipments in a single week. The shipments average about two-thirds hogs and one-third cattle. Sheep figure only in a minor way. In the labyrinth of stock-yards tracks there are rails having a capacity of 8,000 cars exclusively for "dead freight" —sugar, salt, hides and pelts, soap, glue, lumber and the many other things entering or leaving the yards. It is possible to walk block after block over the tops of cars. About 1,000 cars of live-stock are shipped to Eastern points each week.

A corner of the waiting-room in one of Chicago's new railway terminals

With freight as well as with passengers Chicago is the great switching center and transfer point. The switching district of Chicago covers a vast territory. It is estimated that 112,000 tons of local freight are moved every twenty-four hours in Chicago's business district—an area scarcely one and one-half miles square. But in that small compass the passenger and freight stations connect with thirty-five per cent. of the railroad mileage of the United States, or eighteen per cent. of the railroad mileage of the world.

The problem of hauling this vast amount of freight from the point where it enters to that where it is destined for use or for reshipment has been a serious one. It has brought about the boring of a system of freight subways which forms a remarkable feature of the city's transportation machinery. This freight subway system has a total length of about seventy miles. The motive power is electricity. Every freight depot in the down-town district is connected with the tunnels. Their branches also run into the basements of many of the huge business buildings in the heart of the city. Coal for heating and lighting the skyscrapers comes in by these underground trains, and all sorts of merchandise go out.

This subterranean freight railroad runs thirty-three feet below the surface of the streets on the average. Where it passes under the river its depth is sixty-three feet.

Because Chicago is the terminal for so many railroads it is but natural that it should be the headquarters of more railroad associations, bureaus, and similar organizations than any other city. Some of the great office buildings are occupied almost entirely by these bodies, which are as essential to the railroads as clearing-houses are to banks. They discuss and settle various disputed questions, establish uniform rules for the handling of freight and passenger traffic and the operation of trains. In each of these associations the membership comprises representatives of from a score to a hundred lines of railway. They cover every branch of the railroad service, the weighing of freight, its inspection and classification, the division of freight and passenger rates where more than one road carries the traffic, the handling of baggage, and so on.

Owing to its location, the facilities for reaching the city and its attractions, Chicago is the meeting-place of three times as many conventions as any city in the United States. It has attained this eminence largely through the Chicago Association of Commerce, whose Convention Bureau has been especially active of late years. In 1911 this bureau brought to Chicago 310 conventions, with an out-of-town attendance of 244,000 persons. On the established basis of $8 a day expenditure per person with an average stay of four days, it is estimated that these conventions brought $7,808,000 to Chicago. In addition to these 310 assemblages, there were 72 subsidiary and supplemental meetings, the former being those of allied interests, the latter those holding one-day adjourned or special meetings in Chicago after having held their conventions elsewhere. This attendance was nothing unusual. In 1908 there were 270 conventions which attracted 350,000 persons, and in 1910 there were 305 of these great meetings, which brought together 390,000. In the last six years Chicago has had 1,585 conventions, with an attendance of 1,624,000. It is estimated that those attending spent $52,000,000 in the city, exclusive of their railroad fares.

CHICAGO'S STREET RAILROADS

BY SIDNEY OSSOSKI

THE Chicago transportation problem began in 1858, when the Legislature for the first time granted a charter to a company to operate vehicles for the transportation of passengers over a certain portion of the territory of the city. This problem grew in complexity as the demands of transportation increased with the growth of the city, necessitating the granting of new charters to new and competing companies, each of which sought to monopolize as much of the transportation business as possible in conflict with its rivals. The terms of the grants by the Legislature afforded further causes for contention, culminating in the litigation over the Ninety-nine-year Act, and resulting finally, through the efforts of a new financial coterie headed by Henry A. Blair, in a reconstruction and reorganization of the entire financial and transportation fabric of the companies operating on the north, northwest, west, and southwest sides of the city. When the receivership proceedings in the case of the Chicago Traction Company (which was the holding company of seven or eight transportation lines operating on the north and west sides), and likewise the receivership proceedings in the case of the Chicago Consolidated Traction Company (which was the holding company of seven or eight non-related and unconnected transportation lines operating in part inside and in part outside the city limits, under operating agreements with the Chicago Union Traction Company), were finally brought to a close, the former in January, 1908, and the latter in December, 1910, it was apparent to the citizens of Chicago that men of strength and integrity had at last taken the helm and were steering the transportation ship straight toward a permanent and satisfactory solution of one of the greatest transportation problems in the history of municipal government.

The progress that has been made in the development and improvement of transportation facilities since the passage of the settlement ordinances by the City Council dating from February 1, 1907, has been in large part due to the original conception of the transportation leaders that one unified and comprehensive system under one ownership was necessary not only for the growth of the city, but also for furnishing the best transportation service possible, taking into account the need of the public and the physical conditions to be overcome.

The proposal that is now being made by Mr. Blair and his associates is that the two companies operating all the street surface railroads of the city be consolidated with the Chicago Elevated Railways Company, which consists of the Metropolitan West Side, Northwestern, South Side, and Chicago & Oak Park Elevated Railway companies. They point out that instead of the chaos that existed from the early time when the city was growing in population, industry, and commerce, when there were no through lines of transportation and each division did as much as possible to isolate itself from the others, we will have a merger of all the transportation facilities: a comprehensive plan covering the entire city, and not favoring any locality, and tending to unite it, and thus removing all the evils of the former situation when there were three cities, unconnected lacking unity and co-operation, and for the most part without even transfer facilities between them.

Looking back at the accomplishments of the past five years since the adoption of the settlement ordinances, we find that the companies have kept faith with the city in carrying out the requirements of the 1907 ordinances to the extent of exceeding the actual demands made on the companies by the city by nearly 100 per cent. During that time the companies have expended in the rehabilitation and reconstruction of their tracks, in the purchase of new rolling stock and other equipment, in the construction of new car stations, sub-stations for electrical distribution, new machinery, and new overhead and underground work, $70,000,000 in round figures. They have established approximately twenty through routes ranging in length from 12.51 miles of single track to 34.68 miles of single track. The total mileage of these through routes is 460.36 miles of single track, the average length of each route being 23.018 miles. They have provided a single fare of five cents, no matter how long the distance of travel; and they have provided universal transfers to an extent far beyond anything that exists anywhere else in the world. Approximately seventy-two per cent. of the revenue passengers ride on transfers. In no other city in the world does the ratio of transfer passengers to revenue passengers exceed 50 per cent., which is Brooklyn's ratio, New York's being 37.3 per cent., Boston's 41 per cent., Philadelphia's 17.9 per cent., and Pittsburg's 13.6 per cent. During the year ending January 31, 1912, the Chicago Railways Company and the Chicago City Railway Company carried 560,969,655 revenue passengers, of whom 444,479,960 used transfers.

It has never been fully appreciated how much money has been paid into the city treasury by the companies during the past five years under the terms of the settlement ordinances. Up to February 1, 1912, the surface lines of Chicago had paid into the public treasury in the form of city's share (55 per cent. of the net receipts) and taxes, an amount aggregating $12,615,448. In one year alone (1911) the surface lines paid taxes amounting to $1,372,540, and of the net receipts of the companies the city received $1,870,908—that is, in actual money the public received back directly from these corporations in one year $3,243,448, or 11.22 per cent. of the gross earnings. A comparison with other cities shows that in no other large city in the United States does a situation so burdensome upon a public-service company exist, the taxes of the Detroit Street Railway Company, for instance, amounting to less than 3.19 per cent. of the gross earnings. Nor are these the only benefits the public receives at the expense of the companies. The obligations to pave their right-of-way, to sprinkle the streets and remove snow and ice, to furnish free use of poles for city wiring, and free transportation to the Police and Fire departments imposes additional burdens upon the companies of a very serious nature. A consideration of the following figures for the year ending January 31, 1912, will illustrate the extent of these additional burdens:

Cost of maintaining paving	$102,882
Amount of interest charges borne by companies on account of cost of all street paving performed by the companies (estimated)	550,000
Cost of removing snow and ice	99,845
Cost of street cleaning and sprinkling	316,038

Taking all of these figures into consideration, we find that for the year ending January 31, 1912, the total contributions to the public revenues made by the surface lines of Chicago reached the astounding total of $4,312,213, or 14.9 per cent. of the gross receipts.

At the present time the only complaint made concerning the street railways in Chicago has reference to the congestion centering in the down-town business district, commonly known as the "loop district," during rush hours. This congestion, however, it is maintained by the companies, is due to physical conditions over which they have no control and for which the principal remedy lies in a further unification of transportation facilities, together with the adoption by the companies, when united, of such additional facilities both overhead and underground as will remove the main cause of objection. That the companies' contention in this regard is well grounded and justified by the facts must be conceded by any impartial student of the situation. Within this crowded loop district thousands are employed in the skyscrapers and buildings of lesser size, each skyscraper having occupants in numbers equal to the population of the average town, and the smaller ones in proportion. Practically all go to work about the same hour in the morning and leave for their homes about the same hour in the evening. Congestion accordingly results from the tremendous outpouring of people from the tall buildings into the narrow streets, where confusion already exists, arising out of the enormous vehicle traffic and all of this great multitude seeking transportation accommodations at one and the same time. The leaders in the Chicago traction field have demonstrated in the past their ability to solve problems as great as this one, and it is fair to assume that these same leaders, if treated with by the municipal authorities in a fair and liberal manner, will be equally successful in solving the congestion problem for Chicago, besides providing, as they have already, the most extensive system of surface and overhead lines over the widest area of territory that can be found anywhere in the world and at the least cost to the public, having reference to length of ride and the adequacy of the facilities provided.

AMERICA'S GREATEST CROP

How it is being Safeguarded

BY D. MILLER

NE billion, seven hundred million dollars in corn! Enough to pay for the Panama Canal, to build fifty battle-ships, to cancel the interest-bearing debt of the United States, and, over and above all this, leave a surplus large enough to make a hundred men millionaires—such was our crop for 1911. Four months of sunshine and rain plus one hundred and six millions of acres of fertile soil: out of these came this tremendous crop, more than two and one-half billion bushels—enough, placed in wagons, to reach more than twenty times around the earth. The imagination stumbles when it endeavors to conceive such a stupendous quantity—yet every wagon-load will be utilized.

Truly, Corn is King. Its uses have multiplied again and again until there are more than two hundred of them. Parts of the plant that at one time were considered valueless are now put to practical purposes. Farmers are really just learning its great value as a stock feed—just learning how to feed it effectively. The silo for preserving it fresh in winter has become a feature of every progressive stock and dairy farm. Corn bread, "Johnny" cake, corn flakes, corn starch, corn cakes, hominy, samp, syrup, and other corn foods are used almost universally. The cobs are used for pipes, for fuel and fertilizer. Paper is made from a part of the stalk; another part goes to make pyroxylin varnish; while a third part contributes to the making of smokeless gunpowder. The pith packs the sides of battle-ships. Corn oil is utilized in manufacturing paint and lubricating oil, and it is vulcanized for blending with rubber in automobile tires.

Three-quarters of the great world crop is raised in the United States, where its yearly value is more than twice that of cotton, and but little less than that of cotton, wheat, and oats all put together. Yet there are those who point a warning finger at the state of our crops—not corn alone, but all our crops—who threaten us with the law of Malthus: "Population is increasing faster than food-supplies." And truthfully, consumption is increasing faster than production. Our exports are dwindling. Fifteen years ago we exported 25.2 per cent. of our production in raw foodstuffs. Last year we exported 5.13 per cent. Our surplus is decreasing—rapidly.

What will be the situation fifteen or twenty years hence? Are we to be dependent on other nations for our food-supply? Is the cost of living going to continue to rise? Population is increasing more rapidly than production. The demand is growing by leaps and bounds—the supply by slow degrees. Where are we to end? The pulse of the nation is in its crops. If each summer there comes a sure, steady throb of grains, vegetables, fruits, meats, and textiles, you can be fairly certain that as a nation we are enjoying good health. So long as our farms prosper, we eat good food, wear good clothes, live in good houses. When they fail, we are stricken by hard times; the cost of living shoots ahead of our incomes; and, if crops are sufficiently poor for a long enough period, we are certain to become an economically dependent nation.

It is a vast but simple problem, a problem of balancing supply and demand. If the supply is not ample, prices are high, naturally. It is well to look to the farmer; he is at the heart of the nation. The corn crop of 1911, though the most valuable ever raised, though it covered more acreage than ever before, was, in volume, under the average of the preceding five years. Calamity-criers find their opening. "We can't keep production up to consumption." And one would think the country was going to the dogs. "Exports are falling off; prices are soaring."

What are the *facts* concerning the increase of our population? True, from 1900 to 1910 this jumped from seventy-seven millions to nearly ninety-five millions. True, immigrants have sought our shores at the rate of one-half to three-quarters of a million every year. But will this tremendous increase continue indefinitely? The foreign influx is already dropping off. Its effect is only temporary. As these foreigners become part of us their large birth-rate declines. At present "the national increase of the population of this country, native-born of native parents, appears to be approximately 12½ per cent. during a decade, or 1¼ per cent. yearly, with a tendency toward diminution in the rate." This is not so terrifying. But still there remains the task of increasing our crops in proportion as our population increases, even though the latter will not continue to grow so rapidly as some people fear.

A brief glimpse at the history of the corn situation throws a light on this problem. Not so many years ago rich land was to be had in this country at negligible cost. Following transportation facilities, farmers poured into the great corn belt in hordes. They planted corn, for corn brought the biggest money. Year after year they planted corn. At first the crops held up. The farmers thought this land was "inexhaustible." But no land is inexhaustible. The richest soil, when mistreated, weakens, loses its productive power. And so it has been in the corn belt.

In answer to an urgent need, the agricultural scientist has made his entrance. In Europe he learned methods of intensive farming. He experimented. He took his place in the government. He established practical schools of agriculture. He began teaching the farmers how to conserve the soil, how to raise more and better crops, and do it at less expense. At first it was a difficult task. Farmers were skeptical. They weren't strong for theory. They had been succeeding fairly well, doing it their own way. They were practical farmers and they knew how to farm. In a word, they weren't looking for advice from an agricultural school theorist.

Even to-day it has been said that our practice is twenty-five years behind our science. But we are progressing. When the son comes home from the agricultural school and raises seventy-five bushels of corn on an acre of land which has been producing only thirty, the farmer becomes really interested. A story is told of a progressive farmer in Illinois who several years ago increased his average corn yield from thirty bushels per acre to an average of sixty to seventy bushels. His neighbors began watching him closely and imitating his methods of cultivating. To-day, if a map were made showing the corn crop of this section in color, this man's farm would be a spot of solid hue, while the surrounding country would gradually dwindle off into a tint. This is one method of spreading the gospel of scientific crop management. But there are other means which advance the movement by greater strides. The scientists *know* what has to be done to raise a full standard of corn; the difficulty is to get this information to the farmer and to make him *act*. The farmer is stubborn and slow to see where his interests lie.

Iowa farmers meeting a crop-demonstration train of one of the big railroads of the corn belt

It is practically common knowledge nowadays that a continuous growth of corn on the same land, or any other crop, for that matter, year after year will pauperize the soil. But it is another thing to get millions of farmers to drop the immediate high profits in corn to rotate it with alternating crops of clover, alfalfa, or any of the other legumes which serve to restore the extracted nitrogen to the soil. Another simple expedient is the germinating test, by which the farmer can eliminate poor seed before he has planted it. Seed breeding, seed selection, the proper distance between hills, the most effective number of seeds to plant in each hill, the varieties best fitted to certain soils and conditions—all these and many more are matters of vital importance to the farmer and the nation at large. They look small when each case is considered individually, but when you stop to think that by scientific production all over the corn-growing belt the total production of the United States could be doubled, then you get an idea of the vast significance of this work. It is a matter of millions, even billions of dollars to the people of this nation.

Powerful forces are at work showing the farmer how to increase his yield. Besides the good work of the schools, the money of wealthy men and big commercial institutions is being enlisted. A Chicago philanthropist has recently made a gift of $1,000,000, which is to be used to promote scientific farming. This appropriation was made in response to solicitation from the Council of Grain Exchanges, and in the mind of the donor it is an investment which will eventually yield ample returns. Its purpose is to supply agricultural experts to one thousand counties, these experts to put in their entire time doing educational work among the farmers. Added to this donation is the money given by the grain exchanges and that raised in the counties themselves. Farmers' clubs are to be organized, farm exhibits held, and the teaching of agriculture in the schools encouraged, to the end of providing a system of intensive farming equal to that of Belgium, where an enormous population finds a living on each square mile of tilled countryside.

The crop improvement committee of the Council of Grain Exchanges is uniting its efforts with all the commercial, industrial, educational, transportation, and agricultural interests in each county. It maintains a department of publicity, sends out bulletins and co-operates with the farmers in every way possible. In our colleges of agriculture are men of brains and ability who are devoting their lives to the promotion of more efficient farming. Practical idealists they might well be called, for all too often their pay is not commensurate with the importance of their work. The vast power these men are wielding can hardly be calculated. Every year they are sending out trained graduates who go to the farm armed with the priceless knowledge science has given. As the years go by, more and more will we as a nation reap the benefits of this splendid teaching which is now only in its inception.

As is generally the case, when a want comes into existence its answer is at hand. The answer in this case is scientific agriculture. We have plenty of land, good land. In fact, but a quarter of our tillable land is being tilled. All that is necessary now is to get out of the soil what there is in it. The ways of doing this are known to the few—and are becoming known to the many. The problem, with a little help, solves itself. There is to be greater efficiency, not only in the production of corn, but also in the manner of getting it from producer to consumer. The grain exchanges are at work on this question, putting in force rules to facilitate handling. The farmers are joining their hands, forming co-operative marketing organizations, building co-operative grain elevators.

There has been a cry against the railroads for their high freight-rates. But close examination reveals the fact that the great economies of modern transportation have made possible the carrying of grain and other produce at ridiculously low cost. For instance, it costs the farmer on an average forty cents per ton per mile to haul his corn to the railroad. The railroad, on the other hand, carries it at an average rate of approximately three-quarters of a cent per mile. More efficient means of getting the grain from farm to railroad should be devised. The auto-truck should find its way to the farmer. Back of this, vast economies must be accomplished in harvesting. Naturally, the railroads are with the farmer. Their prosperity, just as that of the nation, depends largely on his prosperity. For instance, one of the big railroads of the Middle West, which very nearly covers the entire corn belt with its network of rails, spends large sums of money every year in crop-improvement promotion.

More than any other railroad this line depends upon the success of the corn-growers. Stretching out from Chicago through the great corn belt, through Illinois and Iowa, Missouri, Kansas, and Nebraska, this railroad with its branches brings in millions of bushels of corn for distribution over this country and to be shipped to Europe. A special department takes charge of the crop-promotion work. In the spring pamphlets and literature of various kinds are sent out to the farmers, suggesting improved methods of seed selection and cultivation. Specially equipped trains are sent out all through the corn belt. On these trains are carried crop exhibits. Lectures and demonstrations are given—sometimes as many as five or six a day in different towns. Here we again find our "practical idealist." He is spending his time teaching the discoveries of science—showing the farmer how to grow five ears of corn to a hill where he has been growing only one or two.

IF you asked him for the wind, he would bleat, whinny, or low. He knew nothing about *the* wind. Did the wind belong to Monsieur the Marquis?

But if you said, "Eusèbe, let's have *the good Lord's* wind—" Or, what was yet more effective, if you invoked both his divinities, "Eusèbe, *Fligée* says you can sing like the good Lord's wind in the poplars—" If you went about it right, he threw his head back, looked up at the sky, and gave a ten minutes' performance which stayed with you for weeks. Mamma Binerve never could get over Eusèbe's wordless song. Certainly his performance was superior to the one Omer gave for a penny at the foot of Yar Cross. Omer was a beggar ventriloquist who kept dogs away from the forty-foot granite crucifix; and he earned the right to live by talking like four different people at once—Monsieur the Marquis, for instance, in conversation with Father Tadanac, Maître Mahé, and Schoolmaster Timothé. But Eusèbe would not accept money for his singing.

"I am a shepherd by the grace of God," he explained. "Go and give your thirty pieces to Omer, who makes a business of selling Jesus Christ!"

Eusèbe's business was to pasture stock along the public road. If he gave a performance now and then, it was for the sake of Mamma Binerve, who understood him, or for the sake of Fligée, or because you recognized that Lord God Almighty, and not Monsieur the Marquis, owned heaven and earth and everything else—including Fligée.

Monsieur the Marquis, however, according to earthly deeds in Maître Mahé's office, owned practically the whole of Yar. Yet he did not own the half-mile strip of sand which rose up at low tide between the cliffs and the sea; he did not own Mamma Binerve's good stone cabin and two acres; nor did he own on each side of the national road, marked off by tall, slim poplars, the ten feet of excellent grazing which Napoleon the Great had intended for the trampling of cavalry. No, the marquis did not own everything; not even the tide mill which Mamma Binerve let one-eyed Jagoury build in a cleft of her cliff, and which kept Monsieur the Marquis from having any low tide at all between two of his richest meadows.

The gulls, then, and their little ones, had the beach; Omer, the ventriloquist beggar, had the cross of Jesus Christ; Mamma Binerve had a good stone hut and two acres; Jagoury had his mill; and Eusèbe had the public grazing. Long before the gulls had started to scolding their little ones in the morning Eusèbe went along Napoleon's road bleating, or neighing, or lowing out his offer to pasture three head of stock six hours by the church bells for one square meal and a bit of good-will. And busy peasants, who were obliged to give Monsieur the Marquis a third of all they made, frequently had a cow, or a horse, or a goat, or a sheep which they were glad to turn over to Eusèbe.

For his work they gave him—this one, a hunk of bread; that one, a bottle of cider; further on, a pair of wooden shoes, a coat, a hat, or, coming back to victuals, a big bowl of cabbage set off by a chunk of the good Lord's bacon which kept a man's belly from collapsing in the devil's northeast gales. As for the bit of good-will which Eusèbe bargained for, this rarely meant money, but the right, rather, to spend the evening round some friendly fireside and take part in the family talk. He did not care for money.

"I'm not Judas," he pointed out, alluding to Omer at the Cross of Yar. "Give him his thirty pieces; he's selling our Lord."

But Eusèbe's real grievance against Omer was that the beggar ventriloquist had sold Fligée to Monsieur the Marquis. Fligée was Omer's daughter—which, in Eusèbe's opinion, was equivalent to Fligée's having no father at all. Fligée and Eusèbe had grown up together in Napoleon's road. He had taught her how to live without begging, how to keep a horse from nibbling at the wheat as it munched the good Lord's grass. He and Fligée had eaten cabbage from the same bowl, drunk cider from the same bottle, bit at the same piece of bread at precisely the same time to see who could get away with the most. Then Fligée had started him to singing. It was a fine June day.

"What's the good Lord's wind telling the poplars?" she asked.

"This is what—" he began, looking up at the woolly clouds which an unseen shepherd drove across the sky.

"Keep on," Fligée begged. "You make me feel bad—"

And day after day he kept on, adding now one cadence, then another, knitting the whole together, and learning it by heart. Eventually it took nearly ten minutes to wail out his song, wolflike, at the sky. Then he added touches here and there, such as occurred to him, for instance, when Fligée leaned on his shoulder, or when she kicked off her wooden shoes and waded after poppies in the dew-wet meadow of Monsieur the Marquis. He added these touches to his composition so deftly that his wordless song resembled but one thing in the world—the very wind itself, which wails in its laughter and laughs in its sobs.

"It's so pretty it makes me feel bad," Fligée said. "Keep on—"

They kept on until one fine day Maître Mahé, Schoolmaster Timothé, and Father Tadanac put their heads together and took counsel. Maître Mahé, who was the mayor of Yar, called on Monsieur the Marquis, then he sent for Omer. The ventriloquist beggar signed certain papers. The next day Nicolas Brabant, the Marquis's body servant, came down into Napoleon's road where Fligée was helping Eusèbe pasture sheep, and carried her off to the château. Fligée's work at the château was to scour floors from morning to night, with the privilege, however, of eating regularly three times a day, sleeping over the château stables, and wearing a yellow kerchief to early mass before sun-up. If Eusèbe wished to see Fligée and talk about old times, he had to go to early mass himself. But he was obliged to sneak around behind the big granite pillars of the church and then crawl on all-fours to where Fligée knelt. Father Tadanac esteemed that it was unwise for Fligée to keep company with Eusèbe; and the good priest kept a sharp lookout during early mass. But Eusèbe was used to crawling through hedges and moving in shadows. Fligée, therefore, attended early mass; and while she went through her devotions she listened to Eusèbe, who crouched at her feet:

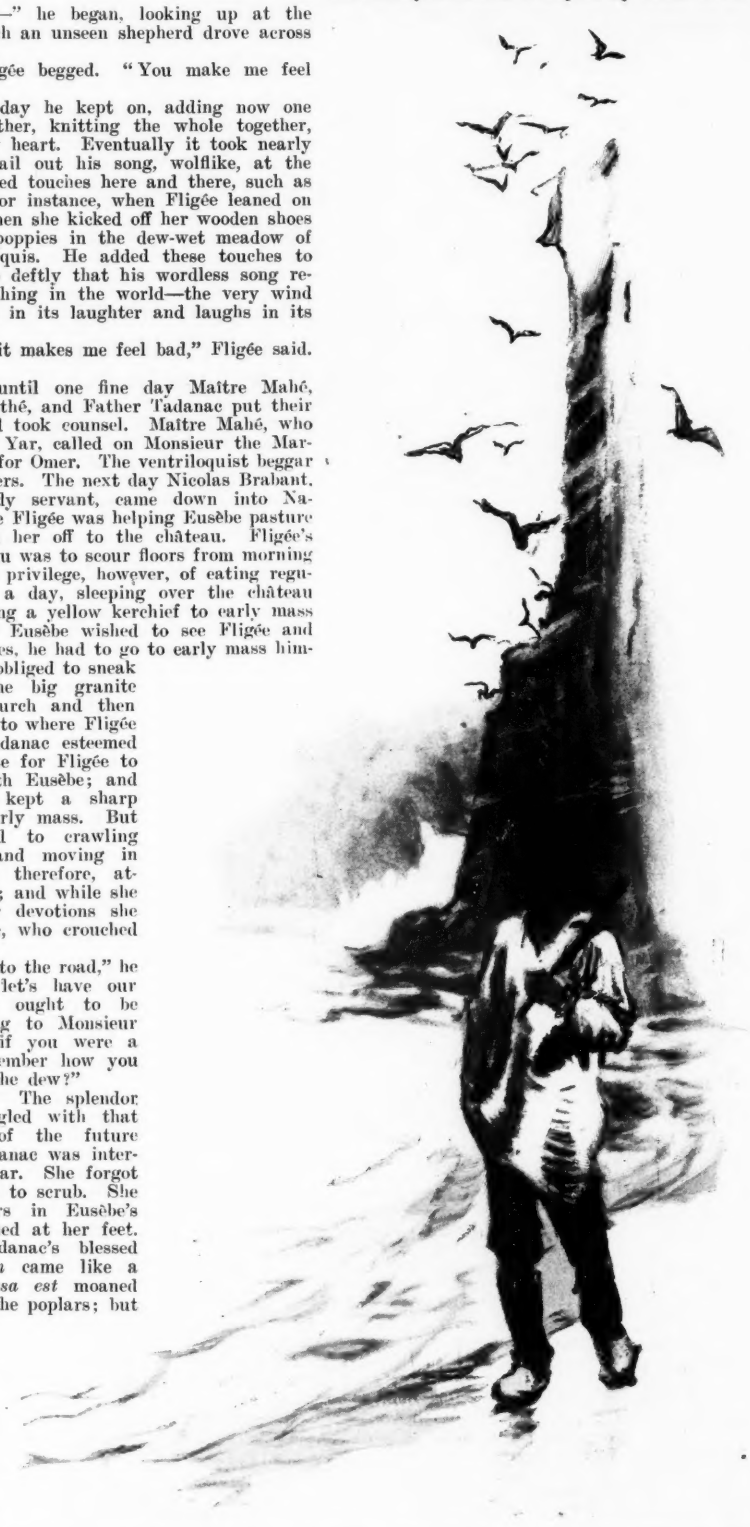
"Come on back to the road," he whispered, "and let's have our old times. You ought to be ashamed to belong to Monsieur the Marquis as if you were a heifer! You remember how you used to wade in the dew?"

Fligée listened. The splendor of her past mingled with that other splendor of the future which Father Tadanac was interpreting at the altar. She forgot the floors she had to scrub. She twined her fingers in Eusèbe's hair as he crouched at her feet. Then Father Tadanac's blessed *Dominus vobiscum* came like a promise; his *Missa est* moaned like the wind in the poplars; but Eusèbe had to sneak out of church like a fox leaving the poultry yard.

He spent all day thinking about Fligée. He had nothing else to think about. He added a new touch to his imitation of the wind—the touch of Fligée's hand in his hair. When Mamma Binerve heard this new rendering of still more perfect harmony she hid her head in her apron:

"Man of God!" she said, "you make me feel so bad!" And she went on telling Eusèbe other things. But he stood there in the road looking up at the sky, even after he had finished singing, and did not hear what Mamma Binerve said. He could think about nothing but Fligée.

Fligée was obliged to think about many things, chief of which was the fact of her being the lowest servant at the château—lower down even than old Mortellec who walked with two canes, washed the pigs, and fed thin slices of real ham to the Marquis's pack of hounds. Fligée did not know how ham tasted. But it was the way the Marquis's blooded horses were treated that made Fligée open her eyes. The horses were stabled just beneath the loft where she slept. They wore warm red blankets—prettier than Fligée had ever seen. And from time to time Nicolas Brabant, the Marquis's body servant, brought out to the stables a silver dish full of white lump sugar, cut as evenly as dominoes. Fligée could not get over seeing those glistening lumps of sugar leave the silver dish and disappear in the mouths of mere horses. She wondered if Eusèbe had ever had a lump of such sugar—and she thought and thought. Finally she dared one day to beg Nicolas Brabant for a lump of sugar. He tossed it to her. She was standing in the barnyard. The lump of sugar fell in the litter; but she snatched it up, brushed the litter off, ran round behind the stable, and hid the lump of sugar in her bosom. Next morning at early mass, instead of twining her fingers in Eusèbe's hair, she reached down to where he was crouching and whispering, and put the lump of sugar into his mouth. He crunched it. He did not know how to kiss the hand which had touched his lips and fed him so much sweetness; but he added a new touch to his wind song and learned it by heart. This last variation had a wild triumph about it, and was so convincing that even Jagoury, the one-eyed miller, crumpled up when he heard it.



The Marquis did not own the half-mile strip of sand between the cliffs and the sea

Jagoury did not like Eusèbe. He did not like Eusèbe's turning up regularly every fall to help Mamma Binerve beat her wheat out. There were only two flails; and Jagoury esteemed that he and Mamma Binerve would have been much better off all by themselves whirling these two flails, he in front of her, she in front of him—"Click, clack, and the glory of God!"

But after Fligée herself, Mamma Binerve was the most appreciative listener Eusèbe had for his wind song. And he never pastured stock the three days Mamma Binerve beat out her wheat. Jagoury, then, instead of having Mamma Binerve opposite him for three whole days, with her flail going *click!* to his flail's *clack!* was obliged to chant the *glory of God* to the strokes of Eusèbe, who had *two* eyes to Jagoury's one, to say nothing of a thin, girllike nose. Mamma Binerve, meanwhile, her bosom full of chaff, stood up on a barrel, shaking her sieve full of wheat, and begging the devil please to send a northeast gale which should blow the chaff off before it fell to the ground with her plump red wheat. Jagoury did not like all that. He did not like to hear Mamma Binerve invoke the devil while he was chanting the glory of God. And he did not like to see Eusèbe pick chaff out of Mamma Binerve's back.

No, Jagoury did not like the shepherd. But one evening about dusk, at the close of a wheat beating, when Eusèbe sang his wind song and Mamma Binerve asked Jagoury if it did not make him feel bad too, the one-eyed miller crumpled up like a sick man and sat down in the weeds. When Mamma Binerve saw Jagoury double up in the weeds, she bowed her head, whined like a she-wolf, and then dropped beside the miller in the weeds. Eusèbe still looked at the sky, as he always did after his wordless song. And Jagoury and Mamma Binerve, their arms about each other, sat there in the weeds watching Eusèbe, who stared at the sky. A star came out.

"Come on in here and sleep in my other room to-night," Mamma Binerve invited.

"You mean me?" Eusèbe inquired.

"Of course I do!"

Eusèbe neighed like a colt, then replied:

"No. You go on and marry Jagoury; he's got a mill. I can't sell the Lord for thirty pieces." And he changed into one of the shadows which the tall, slim, poplar trees were breeding on Napoleon's road.

Before sun-up next morning Eusèbe was one of the shadows which crawled about the church pillars, waiting for Fligée to come to mass. She did not come that morning, nor the next. A month passed, and all he could find out was what Omer, the ventriloquist beggar, told him at the cross. The beggar's daughter, it seemed, had found favor with Monsieur the Marquis, and she no longer scrubbed floors.

"Now you go on and tend cows," Omer told Eusèbe. "Fligée belongs to Monsieur the Marquis, and he wouldn't let the likes of you lick his shoes!"

But Eusèbe kept up his early mass. Fligée had put her hands in his hair; she could not forget him, he felt sure. And the very first time Nicolas Brabant slapped Fligée's jaws and told her he was tired of her, she did think of Eusèbe and hurried over next morning to early mass, wearing all the fine clothes of a château maid. At first Eusèbe did not recognize her with her pretty lace cap. He had been looking for the yellow kerchief he knew so well. When he had crawled to where she knelt, he thought again that he was mistaken; Fligée wore fine leather shoes which stuck out of white underskirts.

"Is it you?" he whispered.

"'Sh . . . ."

He put his forehead down on her shoes.

She reached down and twined her fingers in his hair.

"Come on back," he begged. "I feel so bad!"

"'Sh . . . ."

"You remember how you used to wade in the dew? Come on back, Fligée, and let's have our old times!"

She twined her fingers in Eusebe's hair as he crouched at her feet

From the altar came *Dominus vobiscum*. And while the Latin words yet hung like heavy incense in the air, Fligée whispered down to her crouching suppliant:

"I *can't* come back now; I'm not fit. 'Sh. . . . Go and marry Mamma Binerve and live in her good stone house—"

"*Missa est*—" chanted Father Tadanac.

And mass was over for Eusèbe. He did not pasture stock that day, nor the next, nor in the months which followed. When the tide let him, he wandered up and down the wet sands between the sea and the cliffs. This half-mile strip of desolation did not belong to Monsieur the Marquis, who had fed Fligée to his body servant. If Jagoury asked the shepherd what he was doing, Eusèbe replied that he was tending the good Lord's gulls.

Jagoury was busy grinding Mamma Binerve's plump red wheat; but whenever he saw Eusèbe coming up the beach toward the tide mill, with a flock of quarreling gulls before him, the one-eyed miller, white all over with Mamma Binerve's flour, ran out and deposited on the sand a big bowl of cabbage and a hunk of bread.

"He's still thinking about Fligée," Jagoury told Mamma Binerve. "And it's a pity. Some night he's going to catch cold in your straw-stack, and you'll find him out there a month afterward, just as Schoolmaster Timothé found old Omer in the hayrick he bought from Maître Mahé!"

But Mamma Binerve had no intention whatever of letting Eusèbe die and shrivel up in her straw-stack. She wrapped up choice snacks of bread and bacon in a clean towel and stuck them in the straw-stack high up so the dogs could not get them. Every now and then she added her own bottle of cider. Eusèbe ate her food, after she had sworn the ravens had brought it. But he would not sing for her any more. Nor would he consent to be her husband, although Mamma Binerve put the question to him squarely one cold winter night when she was afraid he would freeze to death.

"Come on," she invited, "and stay in my other room while you are thinking about Fligée. Afterward you'll be my man; I'm not very proud."

But Eusèbe replied that he wouldn't sell the Lord like Judas. He told Mamma Binerve to go and marry Jagoury, who had a mill.

Finally spring came—a spring which neither Jagoury nor Mamma Binerve thought Eusèbe would ever reach. But it was a cold, wet, windy spring which made the tall slim poplars writhe as in the wintertime and whip to shreds their first green leaves. It was a bad spring for wheat. Mamma Binerve had never seen such a spring. Thinking about her wheat, she lay in bed one morning, waiting for day to break. The wind and the poplars had had it out all night. At one moment the dispute was become so jubilantly sorrowful, and so sorrowfully triumphant, that Mamma Binerve sat up in bed, feeling sure it was Eusèbe's wind song—which she had not heard for nine months. Then things grew calmer and Mamma Binerve fell to thinking of her wheat. But she heard Eusèbe again just as the wet day was breaking; and Mamma Binerve jumped out of bed, forgetting her wheat. Eusèbe was whinnying and bleating and lowing out his offer to pasture stock that day.

"He's forgot Fligée!" Mamma Binerve reasoned as she strapped on her clothes. Then she ran to the door. Eusèbe's voice rang out clearer as he approached the cabin. As soon as she caught sight of him in the morning gloom Mamma Binerve called out:

"So you've come back to your senses, have you?" Then she hastened to inquire, "But what's that you've got there?"

Eusèbe was awkwardly carrying something. He stopped whinnying and came up to her.

"Is it a lamb or a puppy?" Mamma Binerve inquired.

The thing Eusèbe carried was wrapped up in an old yellow kerchief.

"I was just coming to see you," he explained. "I'll be your man if you'll take this baby in and let it be ours."

"Whose baby is it?"

"Fligée's."

"And yours?"

"No; Nicolas Brabant's." And Eusèbe hung his head.

Mamma Binerve stamped her foot. "Let Nicolas Brabant take care of his own child!"

"He's told Monsieur the Marquis it's mine. They've driven Fligée off, and now she's going to help me tend stock. We're going to make out it's old times."

"I thought you said you'd be my man!"

"I will. That won't keep Fligée from tending stock."

Mamma Binerve thought a few moments, then asked:

"But where is she now—your precious Fligée?"

"Over there in the straw-stack; she's right sick this morning."

Mamma Binerve again thought a few moments, then asked:

"Man of God! when was this baby born?"

"A while ago."

Mamma Binerve thought yet further, then answered:

"We'd better run over and see Jagoury. No, I'll go; you take the baby back to the straw-stack. No, I mean you take that baby in the house there and put it in my bed—" Mamma Binerve tore like a wild woman down the path in the direction of the tide mill, where next day she took up her permanent residence, leaving the stone-cabin bed to Eusèbe and Nicolas Brabant's baby; for Fligée was no more.

A DAWN SONG

BY ALICE E. IVES

Did no one hear a footfall in the night?
Did no one hear the sound of sudden flight
When the gray year went out with weary sighs,
And the young year came, looking in our eyes?
Did no one see a wonder in the east?
Was there no awesome vision at the feast?
The foolish reveler with his childish toy,
Did he not feel the touch of some new joy?
The dreamer weaving world throbs from his brain,
Did he not feel chords rent with vibrant pain?
Was this earth-quaking passing of the old
But as the silence of a story told?

Shall God hold symbols ever 'fore our eyes,
And we read no evangel in the skies?

O blind! O dumb! O slow of heart and brain!
Let not the vision go till we shall gain
Some answer from the year that's gone away!
The old is past! All things are born to-day!
Only the splendid hours of victories won,
Only the hours when our words brought the sun
Shall live to blaze to greater deeds and days
When our awakened souls, in the amaze
Of God power, live in conscious cosmic light.
Did no one hear a footfall in the night?

THE SOUTHWEST: WHAT IT HAS; WHAT IT NEEDS

BY G. P. CONNOR

TEXAS includes one-twelfth of the tillable area of the United States, and if every acre were put under an intensive system of farming the State could comfortably support the entire present population of the United States. Its extreme length is 760 miles, its extreme width 620 miles, and its variety of climates and soils ranges from orange-producing districts in the southeast through lands and climates of all the Southern and Northern States to the Panhandle, where crops and conditions are similar to those of the mountain districts along the Canadian border.

New Mexico has nearly twice the area of the six New England States and a population considerably less than that of Milwaukee. The tillable soil of New Mexico is one of the richest in the world and yields great returns with little water. Engineers estimate that there is sufficient unused water in the State to irrigate an area larger than that of Massachusetts. The land that will have to be managed under dry-land farming systems when devoted to dairying will furnish comfortable homes for 50,000 families.

Colorado is farmed only in small areas, yet the annual products of her farms are worth more than twice the output of her mines of gold, silver, and other metals and of coal. There is water to more than double the area under irrigation, and the plains need 80,000 families to follow dairying and hog-raising and poultry-growing. With dry-land forage crops that have never failed every family could make a prosperous home.

Oklahoma increased more than a million and a quarter in population in the last decade, and yet the agricultural development has just begun, and a million families can find immediately opportunities to secure good homes and good incomes in developing her untouched agricultural resources. Oklahoma is a land of corn, wheat, alfalfa, Kaffir corn, fruit, and livestock, and in addition to all these Northern farm products is one of our great cotton-producing States.

Kansas farmers have good farms, pleasant homes, and large bank accounts. As a class they are among the most prosperous farmers in America. There are a millions acres of rich land in this State that is still unbroken prairie, and tens of thousands of large farms that would furnish double the returns if subdivided and operated by twice the present number of families. Some of the leading conservative men of the State are now organizing a movement for the subdivision of farms, for the making of farms, and the building of homes out of the great prairie pastures. The lowest estimate is that the consummation of such a movement would provide homes for a million people in the near future.

Louisiana is the southeastern member of the family of Southwest States. It contains forty-five million acres of land as rich as the valley of the Nile, soil that has been brought down by the Mississippi and is the cream of the earth from fifteen States. Only one-ninth of this fertile soil is under cultivation. Two full crops can be raised each year in every part of the State. With their present methods of cultivation Louisiana farmers average twenty bushels of corn an acre. Hundreds of trials have shown that the same fields, under the corn-raising methods of the North, will produce 75 to 140 bushels an acre. With the full acreage of the State put in cultivation under the best systems, the increase in both the production and the population would be simply astounding.

Arkansas until recently has been a great forest, about one-third larger than Ohio. There were a few broad prairies and openings. A thousand saw-mills are now making lumber and adding tens of thousands of acres every year to the land available for farming. This "cut-over" land is especially adapted for the cheap production of pork of the choicest quality. When Arkansas secures by immigration a sufficient number of expert swine-growers the State will feed the world with prime bacon and ham. Four-fifths of Arkansas is either hilly or mountainous, and the hill lands are not surpassed anywhere in the world for producing apples, peaches, berries, and potatoes. The rich valley lands produce high yields of corn, cotton, and alfalfa. The prairie lands produce the highest yields of rice. Where the timber has been cleared, native grasses, without seeding, cover the land, making great pastures for fattening beef cattle and for dairy cows.

The Southwest needs men and money—millions of men and their families and many millions of money. Both can make large profits. It requires skilled farmers to develop its great agricultural resources—men who are expert in farm management and understand how to secure the profits from high-yielding strains of seed, deep plowing, thorough cultivation, and good marketing. It needs master hands in breeding and feeding for beef, mutton, and milk. It wants men who can produce the most and best from orchards and gardens. The Southwest can support families skilled in these lines equal to the present population of the United States, and they in turn can feed this country and Europe with choice farm products.

The Southwest is severely handicapped for lack of capital. Farmers in Arkansas are paying three per cent. a month for money to carry on their farm operations. Not because the security is poor, but because the local bankers have not money sufficient to finance legitimate local industry. It needs strong financial organizations, each with millions at their command, to develop the enormous "cut-over" timber tracts of Arkansas and Louisiana into productive farms and orchards.

Louisiana needs millions for drainage—the government may provide these—and millions for farm development. The security is the best—soil and climate that will produce two paying field crops each year.

Oklahoma banks were unable last spring to furnish much more than half of the money actually needed by the farmers for their planting, etc.; and the prospects are that this fall millions of dollars will be required to buy cattle and hogs that will be profitably fattened on this year's feed crops. The whole State needs money for permanent seeding of large areas to the State's most profitable crop—alfalfa—and there are many practical irrigation projects that cannot be established until funds are secured, also funds for stocking the whole State with dairy cows.

Texas offers unlimited opportunities for the profitable investment of funds in almost every branch of agricultural development. Forty million dollars could be profitably invested within the next year in building irrigation systems in eastern New Mexico. Southwestern Kansas alone needs capital to develop irrigation on half a million acres by pumping. Eastern Colorado offers many opportunities for the use of capital for developing dairy centers and such investments offer quick returns.

The men who furnish capital to develop the Southwest should know more than merely to loan money on safe security and to collect interest and principal. They should be men who are builders, men who can go into a new district with the vision to look farther ahead than their neighbors and see all the possibilities. They must be men who will hold speculation in check and at the same time push every farmer and business man in legitimate expansion. They should be men that the farmers can consult in regard to planting, buying stock, and feeding. They should be the guides of their communities in marketing farm, orchard, and garden products and in the making of profitable investments in farm improvements.

Every three successful farm families located in the Southwest means a comfortable living for another family in a Southwest town, and the steady development of the agricultural resources of the Southwest will effect a regular growth of her cities. This will mean the development of homes, markets, factories, mills, and business institutions.

WHAT STEEL DID FOR A GREAT CITY

BY CHARLTON WILLIAMS

CHICAGO was the first of the great cities of the world to rise under purely modern conditions. Less than fourscore years ago a two-story log cabin was the city's biggest structure. It stood in what now is the "Loop" district, so-called because of the many lines of street-cars that turn there. On the site of this log-cabin stands a steel-framed structure more than twenty stories high. All about it tower other gigantic skyscrapers. All of these have been built within the last twenty years.

Business in Chicago is housed on a spacious scale. Structures from twelve to twenty or thirty stories high are not confined to any particular section of the city. Next to New York, Chicago has the most wonderful skyscrapers in the world. In Chicago there are more than one hundred and fifty buildings whose height and area are notably great. Bigger and loftier ones are being added year by year. The sky-line of Chicago is changing even faster than that of lower Manhattan. The putting up of steel-construction buildings is proceeding on a stupendous scale, but any loyal Chicagoan will tell you that the city is still in the making; that the present is no more than a promise, and that the Chicago of the future will date from to-morrow.

It is still a debatable question whether New York or Chicago had the honor of the first steel-skeleton building. At any rate, the demand that made these lofty structures a necessity was the same in both places. The crowded condition of the down-town business district caused realty values to mount so high that a profitable return on an investment could not be had by employing the old type of brick-and-stone construction where six or seven stories in height marked the limit. So the constructors ran their buildings high in air. The improvements in elevators made the topmost floors almost as accessible as those close to the ground. Light and air were discovered to be salable commodities, for the offices where they were most abundant commanded the highest rentals.

The skyscraper-builders in Chicago, however, have had different foundation problems to cope with from those of New York and other cities where the ribs of rock are close to the surface. The surface of Chicago was once almost on a level with the lake's waters, although now it is some twenty-five feet above it. The soil is soft and sandy, and the giant buildings have to have special foundations prepared for them. In some cases before the work of laying the foundation can be started a heavy mass of steel rails must be buried in a concrete bed, the rails being laid criss-cross. Another method is to build stone or brick piers close together and then to fill the spaces in with cement, so that what is practically one enormous block of stone is obtained on which to place the foundation. In some places the bedrock is about one hundred feet down, and here it is the usual custom to let the building rest on two or three hundred concrete "legs."

The first skyscraper that was built in Chicago with such a foundation gave the foundation engineers something new to think about. About three hundred open wells, some eight feet in diameter, had to be dug straight down to the solid rock. When they were finished they were to be filled with concrete. The first well was quite a distance down through the thick clay when, one morning, the engineer observed that the entrance to the shaft had changed from round to oval overnight. Investigation showed that the weight of the skyscraper across the street—resting on a "raft" foundation—was squeezing up the blue clay and would be likely to close up the "wells" as fast as they were dug. Since then all such holes down to bedrock in Chicago have had to be heavily braced until they were filled with the concrete and the concrete had become a solid mass.

There is another unusual feature about skyscraper-building in Chicago. When the foundations of a tall building are being prepared in other places, the great quantities of earth and rock that are excavated are hauled away a load at a time in carts that impede the traffic and leave trails of sloppy dirt for pedestrians to wade through. In Chicago, when a new building is to go up along the line of the great freight subway, a connection is made with the tunnel and the cars are backed beneath a chute, where the dirt is shoveled down into them. When they are filled they are taken to the disposal station at Madison Street and the river, where the dirt is dumped into scows and carried away. The dirt from the new city hall and from the new Chicago & Northwestern railway station was disposed of in this way. A new line of tunnel had to be constructed to make the connection with the railway station.

Chicago is said by engineers to hold the record for putting up the skeleton of a big building. This record was established early this year. The building was 50 by 100 feet and seven stories high. All floor-framing was of I-beams. The weight of the steel was about four hundred tons. This was all placed and erected in fifteen working days of eight hours each, or one hundred and twenty working hours. The heaviest pieces handled weighed seven tons. The ten-ton derrick with a sixty-foot boom could place material for only two stories at one setting, so that it had to be raised four times during the work. The erecting gang consisted of only eight workmen: one foreman, one bellman (to give signals to the engineman), two connectors, two hookers-on, one poleman (to push the boom around), and a derrick engineman, who acted also as a fireman. The riveting was done by a following gang of four men with a pneumatic riveting hammer.

There are half a dozen immense iron and steel rolling mills in and near Chicago, so the material for steel-construction buildings is nearer at hand and somewhat less expensive than it is in places more distant from the points of production. The product of these rolling mills is valued at about $25,000,000 a year. Some of it is shipped to other cities, of course, but a good share of it goes into the upbuilding of Chicago. The value of all the buildings erected last year in Chicago was nearly $100,000,000. The greater part of this big sum went into steel-construction buildings.

A typical Chicago skyscraper, like the Commercial National Bank Building, burns 10,000 tons of coal per annum and uses 39,000,000 gallons of water in a year. Its elevators carry an aggregate of 7,435,540 in the course of 307 working days. There are nearly ten acres of floor space to clean each night, including one and one-third miles of corridors, and 12,000 electric globes to be cleaned. The weight of the steel used in a building of this sort is nearly 10,000 tons, and the structure is the working-place of about 3,000 persons.

There is a plan afoot to reconstruct Chicago and to make it the handsomest city in the world, with the most accessible business center. The leading citizens and civic bodies have been working on it actively for several years. The ideal is a "unified, stately, and beautiful city" that in fifty years will be larger than London—in fact, the largest in the world. If these plans are carried out—and there seems to be every prospect of it—the total expenditure for reconstruction during the coming half-century will reach nearly a thousand millions of dollars.

Interludes

THE READY REPLIER

(Being a Compendium of Conversation for Use Under Embarrassing Conditions.)

By Prof. Wilberforce Jenkins, R.F.D.

FOR A YOUNG MAN WHO HAS JUST BEEN TOLD BY A FROWNING CASHIER THAT HIS ACCOUNT IS OVERDRAWN.

The Cashier: What sort of a bank do you suppose we are running here, Mr. Dubbleigh? We can't cash this check with your account already overdrawn four dollars and sixty-eight cents.

You *(with a pleasant smile)*: By Jove, Mr. Cashbox—you don't mean to say so! Now isn't that extraordinary. It is very strange, indeed, how one's literary training will make itself apparent even in the very slightest of the productions of one's pen. You know when I was a student at Bolivar I took special courses in the romancers of the past under Professor Bliffkins Bluff, the well-known entomologist, who was filling the chair in literature during the absence of Dr. Wiggleton Penpush on his sabbatical year. We went over them all from Ananias down to Traymore Pickleton, whose books on the doings of the Smart Set you may perhaps have read. The deliciously poetic fancies of Shakespeare, so supremely superior to the pen-pictures of the later dramatists in their interpretation of the highest conceptions of idealistic humanity, occupied our attention for a whole term, and thence we ran on to dear old Goldsmith—modest old Noll they called him—from whose quaint pen we have derived many a notion that has been uplifting to us, even though, as in the case of Shakespeare, his pictures were not wholly true. Their sentiment was pure gold, even if, as accurate delineations of life, as it was lived in their day and generation, they were manifestly not within the precise facts.

The Cashier: That isn't the question, Mr. Dubbleigh—

You: No—far from it. It is only a part of the question. Viewed in the large the question is whether a romancer is justified or not in so depicting life and character as to make it appear to be better than it really was. As for me, I find myself in entire accord with those critics who claim that it is the mission of literature to uplift, to glorify, to make men of such heroic mold and capable of such deeds of daring as shall inspire the readers of a later generation to go out themselves upon the highways and byways of life and at least make the endeavor to do deeds equally doughty themselves. No doubt life is not all great achievement—there is much that is sordid and mean in it; but yet if we take the trouble to look for them we shall also find the nobler virtues. Truth is well enough, but ideals based upon possibilities—ah, Mr. Cashbox, there you find the noblest foundations for work of true genius.

The Cashier: Will you be good enough to tell me what this has to do with your overdrawn account?

You: I was coming to that, sir. Victor Hugo's most immortal production was his description of the Battle of Waterloo—

The Cashier *(pounding and roaring)*: Well, what if it was?

You: Why, just this, Mr. Cashbox. It is notorious, sir, that considering the facts his account was tremendously overdrawn, and yet, sir—

At this point the cashier will reach for the inkstand, and you will do well to retire.

JUSTIFIABLE ASSAULT

"What are you grinning at, Bildad?" asked little Binks, meeting Bildad on the highway with large quantities of mirth spread over his countenance.

"Oh, nothing," chuckled Bildad. "I was only wondering whether, after this cruel war is over, Turkey will be transformed into an Austrich under Austria."

It was upon proper evidence that Bildad had really thus invited the trouble that the astute magistrate acquitted little Binks of the charge of assault and battery.

THE NEW YEAR: Well, Father Time, it seems pretty hard on a chap to start him off handicapped with an unlucky number.

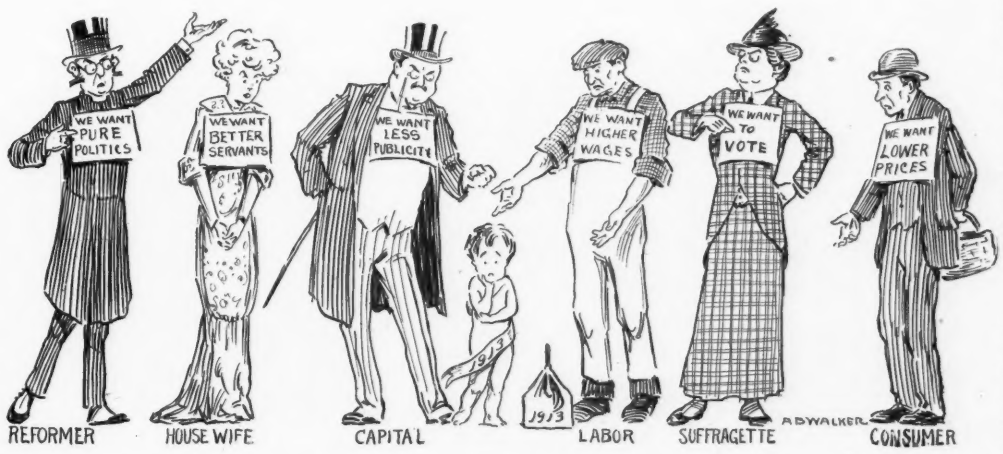
A BUSINESS WOMAN

"Araminta," he cried, passionately, "I would die for you!"

"All right, Henry, dear," the fair maid replied, "only I hope if that is the case you have not neglected your life-insurance premiums."

FUEL FOR REPENTANCE

"Hast made any goodly resolutions for the new year, Master Joshua?"
"Nay, but I have right good hopes of so doing."
"Then what meaneth that devil's load at thy saddle, Joshua?"
"Marry, come up, Parson! There lie my hopes, for without that devil's load there would be no goodly resolutions."



A HAPPY (?) NEW YEAR.

A LESSON IN PRONUNCIATION

"How do you pronounce that word 'divorcée,' Professor?" asked Mr. Slabsides. "Is it 'divorsay' or 'divorsee?'"

"That all depends, my young friend," smiled the Professor. "When Mrs. Jones-Smythe-Wiggles got her first divorce I should have called it Divorce—A, but now that she has come through with a third I should say that Divorce—C was a justifiable form."

AN EMPTY HONOR

"I hear the ladies of your church got up a purse for the parson," said Wiggleton.

"Yes," said Dabbs.

"And was the old gentleman pleased?"

"Well—no. You see," said Dabbs, "after they'd got up the purse they couldn't raise any money to put in it."

UNDER MEDICAL ADVICE

Irate Tailor: Now look here, Mr. Scribb, this has gone on long enough. I demand a check right now.

Impecunious Author: Sorry, Snip, old man, but my physician has ordered me to quit writing altogether for three months.

NOT NEEDED

"Do you carry burglar insurance on your home, Bildad?" asked Wiggles.

"I used to, but since the twins came I've given it up," said Bildad. "Nobody sleeps at our house after dark, so what's the use?"

THE LOVE LYRICS OF PHYLLIS

ON STREPHON'S BALD SPOT

Upon the top of Strephon's ruby head
A spot of ivory amid the red
Doth, like a yellow daisy in a field
Of blushing peonies, stand full revealed.
A good deed in a naughty world is not
More fully blazoned than that self-same spot,
That in a lush, luxuriant, display
Of hirsute doth its innocence betray.

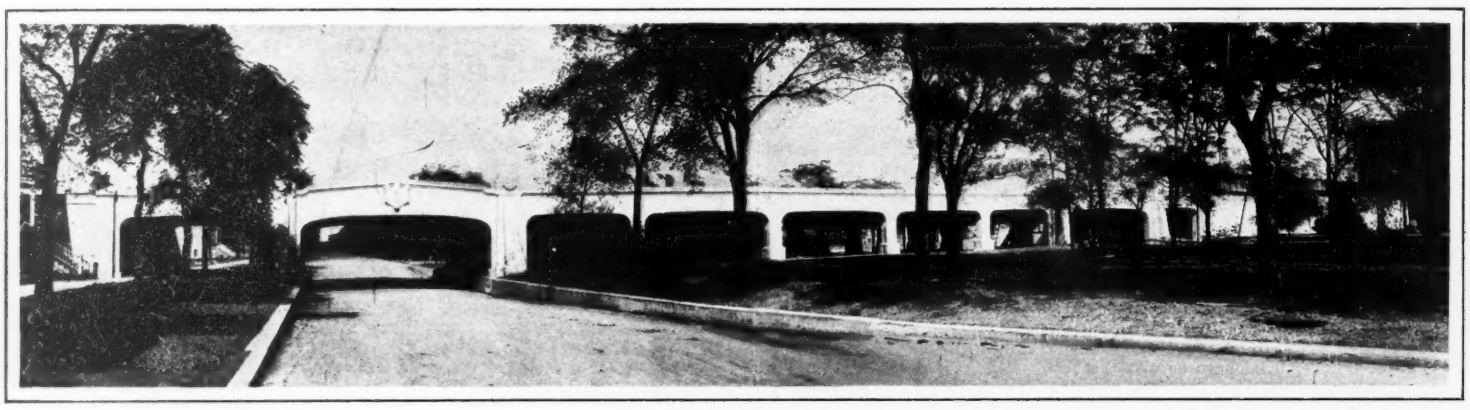
At night when murky dark comes over all,
And clouds have thrown the moon beneath a pall,
And e'en the stars that shine upon the world
In gloom and inky blackness are enfurled,
And sharpest eyes are impotent to pierce
The horrors of that adumbration fierce,
When Strephon's hat is off then all is right—
That little spot shines like a beacon-light!

Like an oasis in a desert drear
It lies there bright and beautifully clear—
A jewel like the Koh-i-nur—a gem
Set in a capillary diadem.
Serene, untroubled by the stress of life,
Calm, imperturbable amid the strife,
How I rejoice that its effulgent shine
Streams forth from Strephon's head, and not from mine!

John Kendrick Bangs.

THE COMMERCIAL AND INDUSTRIAL GROWTH OF CHICAGO

BY HERBERT BANNISTER



The elevated tracks over Independence Boulevard, Chicago

LOOKING through the history of the commercial growth and industrial development of the United States and the expansion of its trade with foreign nations, one readily sees how the exploitation of the country's vast natural resources has been at once reflected in the extraordinary growth of American cities. No other country, irrespective of size, can boast so many cities of the first class—to say nothing of the smaller cities which are so numerous in every State in the Union.

Of the American cities, Chicago stands pre-eminent in the point of remarkable growth. From a frontier fort and village boat-landing less than three-quarters of a century ago Chicago has grown to be the second city of the country. The first visit of the white man to the site upon which Chicago now stands was made as early as 1634 by the French explorer Nicolet. With emigration pushing westward after the close of the War of 1812, settlers went to the wide acres of deep, rich soil of Illinois in large numbers, and Chicago became the trade center of the colonists of that time. When the village grew in importance, steps were taken to bring about its incorporation as a town, which was done in 1837. Chicago at that time had a population of about three thousand. The growth of Chicago and its manufacturing interests was for a number of years slow. Operations had to be extended from accumulated surplus rather than with the assistance of outside capital.

It was not until 1850 that Chicago gained its first railroad connection with the outside country, and with the railway came an era of industrial expansion which has known no setback. The value of the annual output of manufacturing plants in Chicago in 1850 was about $3,500,000, while within the next five years this had been increased to $15,000,000. The railways opened up new opportunities for Chicago, placing the city in direct connection with other trade centers of the country. The development of the West and the attendant increase in population meant much for Chicago, each successive decade placing the national center of population nearer to the city. Chicago, therefore, became the natural gateway for commerce between the East and West. Large manufacturing concerns and industrial plants of every description located within its limits because of the ease with which raw materials were procurable, as well as on account of being at a central point of distribution.

Some idea of the growth of Chicago as a manufacturing center may be gleaned from statistics of the increased value of the products of its factories during the last ten years. In 1902 the value of the products manufactured at Chicago was about $1,200,000,000, which, however, had increased to about $1,500,000,000 in 1911. The wholesale trade of Chicago in 1902 amounted to about $1,300,000,000, while in 1911 this had increased proportionately with manufactured articles, or to about $2,000,000,000. The total value of the wholesale trade and the products of manufacture in 1911 was about $3,400,000,000.

Chicago leads other American cities in the supply of foodstuffs consumed by the country's population. Most of the meat consumed in the American households is produced in its large packing-houses. More than 16,000,000 head of live-stock are slaughtered in the Union Stock Yards each year, the value of these animals being about $350,000,000. In the forty-six years since the Union Stock Yards have been established in Chicago, the total stock received has been about 480,000,000 head, valued at about $9,000,000,000.

As a grain market Chicago leads the American cities. In 1911, 241,558,600 bushels of grain were delivered to its elevators. Much of this grain was transhipped to other sections of the country and a considerable quantity was exported. Last year 5,859,396 barrels of flour were manufactured in its big mills and shipped into the markets of the world. Statistics compiled by *The American Lumberman* show that the total receipts of lumber at Chicago during the year 1911 were 2,134,567,000 feet and 481,193,000 shingles. Of this vast quantity of lumber, 803,923,000 feet were shipped to other markets. The difference of 1,334,644,000 feet used in local consumption brings out the fact that Chicago is the largest furniture market in the country as well as the leader in the production of pianos, organs, carriages, and other products of wood.

An accurate barometer of a city's progress and the stability of its banking interests is afforded by its bank clearances, which indicate the amount of business transacted in outside markets. For the year 1911 the bank clearances at Chicago totaled $13,925,709,802, which, according to official figures, is second only to New York in the list of American cities. The phenomenal growth of Chicago as a trade center during the last seventy-five years is due chiefly to the unexcelled transportation facilities which the city has enjoyed. In this regard Chicago easily surpasses every other city on the globe. The principal gateway between the East and West, and holding the key to the commerce of the great Mississippi Valley, the greater portion of traffic between these regions is shipped through Chicago or is consigned to its markets.

Chicago is the world's greatest railway center. Twenty-seven American railway systems, with a total of 85,009 miles, have terminals in Chicago. These roads are the Atchison, Topeka, and Santa Fé; Baltimore and Ohio; Chicago and Western Indiana; Chicago and Alton; Chicago, Burlington, and Quincy; Chesapeake and Ohio; Chicago and Eastern Illinois; Chicago Great Western; Chicago, Indianapolis, and Louisville; Chicago, Indiana, and Southern; Chicago, Milwaukee, and Puget Sound; Chicago, Milwaukee, and St. Paul; Chicago and Northwestern; Chicago, Rock Island, and Pacific; Cleveland, Cincinnati, Chicago, and St. Louis; Chicago, Terre Haute, and Southeastern; Erie; Grand Trunk; Illinois Central; Lake Shore and Michigan Southern; Michigan Central; Minneapolis, St. Paul, and Sault Ste. Marie; New York, Chicago, and St. Louis; Pennsylvania; Père Marquette; Pittsburgh, Cincinnati, Cleveland, and St. Louis, and the Wabash. Nearly five hundred train-loads of "through" freight are handled by way of Chicago every day of the year. Chicago is likewise the great gateway of passenger travel. Nearly two thousand passenger trains depart from its terminals each day for all points on the continent, there being direct service to every important city in the country.

The terminal tracks of the railways within the city limits of Chicago aggregate nearly 2,500 miles, a figure in excess of the main-line mileage of most States in the Union. Besides the terminals in Chicago, the freight service within the city is further augmented through a series of belt lines or transfer railways, thirteen in number, which reach all of the principal industries. These belt railroads are:

Baltimore and Ohio Chicago Terminal Railroad	289	miles
Belt Railway of Chicago	101	"
Chicago Junction Railway	203	"
Chicago River and Indiana Railroad	50	"
Chicago Union Transfer Railway	100	"
Chicago, West Pullman, and Southern Railway	10	"
Chicago and Calumet River Railway	12	"
Elgin, Joliet, and Eastern Railway	198	"
Indiana Harbor Belt Railroad	108	"
Illinois Northern Railway	12	"
Manufacturers' Junction Railway	3	"
Chicago Short Line	17	"
Chicago and Illinois Western	54	"
Chicago and Western Indiana Belt Railway	—	"

The total trackage of these belt railroads is about 1,600 miles.

The demand for industrial sites in Chicago long ago became so urgent that it was necessary for manufacturing concerns to go beyond the confines of the original business district. In order to handle traffic expeditiously the city is divided into traffic zones, served by the various belt-line railroads, extending around the city and gridironing the manufacturing districts. Principal among these traffic zones are what are known as the inner and outer belts. The Baltimore and Ohio Chicago Terminal Railroad and the Belt Line Railway of Chicago comprise the inner belt, the outer belt being composed of the Indiana Harbor Railway and the Elgin, Joliet, and Eastern Railway.

The Baltimore and Ohio Chicago Terminal Railroad, the largest and most important belt line in Chicago, is considered one of the most valuable terminal railway properties in the country. The Terminal has 289 miles of tracks extending entirely around Chicago, reaching all of the large manufacturing districts, and making direct connections with every trunk-line railway system entering the city.

The property which was formely known as the Chicago Terminal Transfer Railway was purchased by the Baltimore and Ohio Railroad about two years ago, and has since been extended and improved. In addition to affording this Eastern trunk line with terminal facilities, both passenger and freight, several tenant lines, including the Père Marquette, Chicago, and Great Western, and Soo Line are accommodated.

The Baltimore and Ohio Chicago Terminal Railroad is essentially an industrial line. Its tracks serve 354 of the large industries in the several traffic zones—more industries than are reached by the several other belt lines in Chicago. For several years the downtown manufacturing districts of Chicago have been overcrowded, and to relieve the situation new developments have taken place in the outlying districts contiguous to the belt lines, where satisfactory transportation facilities are available. Experts in city development predict for Chicago that within the next five years there will be living within the city limits 5,000,000 people; and this increase will be reflected in the number of new industries which will furnish the means of livelihood for this populace.

A DECEMBER LANDSCAPE

BY JOHN TAINTOR

THE gaunt pines stand like sentinels
  Against the blood-red west;
The spectral fields lie white as death
  Upon earth's shrouded breast.

Black are the boughs where once the Spring
  Ran like an emerald flame;
Still are the boughs where lyric throats
  Sang praises to Spring's name,

My heart, that blossomed once with flame,
  Is cold as ice-bound clay;
Is silent as those stricken boughs,
  Though once it sang like May.

. . . . . .

The gaunt pines stand like sentinels
  Against the blood-red west;
The spectral fields lie white as death
  Upon earth's shrouded breast.

How To Be English

By "Anglo-American"

Pictures By Albert Levering

I WANT to submit a proposal. It is that a school should be started in London to teach Americans how to be English. Not all Americans, of course; not the summer visitor or the business man or, indeed, any one in trousers; but the Americans in whom alone England is interested—the girls who marry into the English nobility and bring with them the New World to redress the banker's balance of the Old. No one has any idea of the anxieties and humiliations that await the heroines of these Anglo-American marriages when they enter English society. They find themselves in a world that only in outline resembles the world they have left, and in detail is altogether dissimilar. The tricks and accomplishments and interests that serve in New York are of very little use in London. They have to acquire a new social outlook, to adapt themselves to a new code, to learn new ways of doing things. They have to bridge the enormous gap that separates English from American society. They have to discover and to master the innumerable points at which Englishmen and Americans, while meaning essentially the same thing, express themselves in different senses. They have to adjust themselves to an environment of which their American experience has given them no inkling whatever. There are a thousand and one details of manners and social usage and conventions into which they are obliged to initiate themselves as best they can. There is no one to teach them how to do it, and many of them in consequence carry to their graves the marks of a defective attempt to teach themselves. They make enormous "breaks" which are overlooked simply because English people have got into the way of forgiving anything and everything in Americans. I know one American countess who after fifteen years in English society has still not learned how to shake hands in the English fashion. Yet like all Americans she was desperately bent, when she first settled down in England, on doing "the right thing." No people make such a religion of the conventions as do American women, and it is inexpressibly annoying to them to find themselves, especially in England, at a loss to know what the immaculately right thing is. What obviously is needed is an institution that will act as a sort of preparatory school to English society and turn out its graduates with a thorough knowledge of what they have to expect and of what will be expected from them.

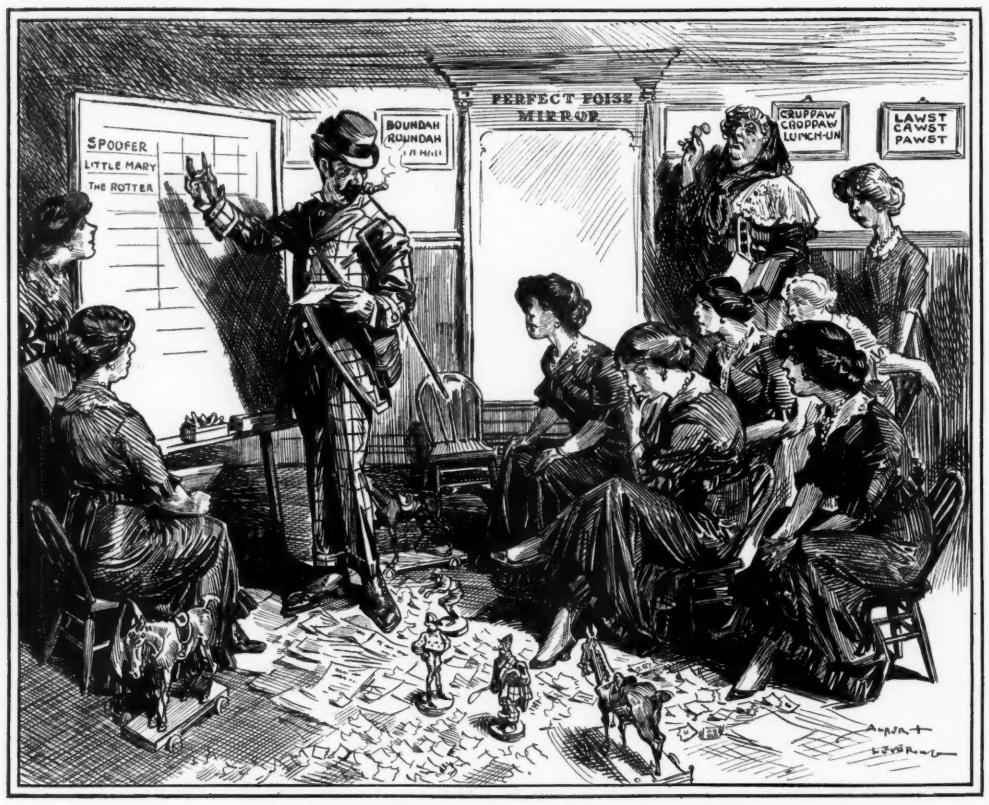
The moment, indeed, one begins to think seriously of such an establishment and to map out its curriculum, one sees that it has an office to fulfil of quite boundless utility. The obvious people to act as professors are the English mothers-in-law of the American brides. That would ensure the instruction being thorough and precise. Under their expert tutelage the American *émigrée* would learn to avoid the phrases and expressions that ladies use in America, but only charwomen in England, and to cultivate the phrases and expressions that only charwomen use in America, but that are perfectly "correct" on the lips of an English lady. She would be put through a severe course in the tables of precedence and Debrett's "Peerage"; she would be delicately coached in the leading scandals of the moment and of the recent past; she would be taught how to keep her emotions and exclamations in unwonted check, and to assume the proper British mask of impassivity; the secret of how to take everything for granted and of how to stop asking questions would be revealed to her; and every care would be taken to drill into her the right shade of superciliousness and condescension in her treatment of her social inferiors. These things are of fundamental importance and there are, besides, innumerable minutiæ of deportment that would need attention. I foresee in addition at least half a dozen main lines of social education in which the school I am advocating would be of inestimable value to American brides anxious to be Anglicized as quickly and as easily as possible. Very few American girls, for instance, have any experience in their own country of how to play the part of Lady Bountiful. But that is the permanent rôle allotted to them when they become the chatelaine of a great English house. Whether she likes it or not an American peeress is doomed to appear on platforms, to make little speeches, to open wings of hospitals, to present the prizes at the local schools, to lend her presence and voice to an endless programme of benevolent functions, and to be the affable guardian angel of her husband's tenants and of most of their friends and neighbors. Presiding over, organizing, and supporting every form of charity, getting up bazars, fêtes, garden-parties, concerts, and fancy-dress balls—these are among the settled avocations of an Englishwoman of position. Obviously, then, a course on the theory and practice of public philanthropy would have to be included in any scheme for educating American brides in their new duties that made the least pretension to completeness.

Then, again, there are some dates that you simply must know to hold your own in England. August 12th is one of them—the "Glorious Twelfth"—when grouse-shooting begins. September 1st is the second; it marks the opening of the partridge-shooting season. October 1st is more important still, for on it you may shoot pheasants without breaking the law. But greatest and most pregnant of all is November 1st, when fox-hunting commences its five months' reign. To round off your social education you must also know precisely when each season closes. Grouse-shooting, then, lasts from August 12th to December 10th; partridge from September 1st to February 1st; pheasant from October 1st to February 1st; fox-hunting from November 1st to March 31st. With these dates at your finger-ends you are at least equipped to listen intelligently to the dominating conversational topics of half the English year. Without them you will be socially lost. Now the odds are that the American bride, even if she has mastered the dates, knows nothing of the sports to which they refer, has never shot a pheasant in her life, couldn't tell a grouse from a partridge, has the most fragmentary ideas of how a shooting-party should be entertained, is ignorant of the etiquette of a hunt breakfast, and has no opinions at all on the eternal controversy that rages between the fox-hunters and the game-preservers. It is manifestly unfair that she should be plunged into this highly technical world of sport without some previous grounding. In the school I am contemplating there would accordingly be lectures on the broad features of each and all of these pastimes, both from the sporting and the social standpoint. This would enormously diminish the number of those American brides who begin their social career in England uncertain as to whether foxes are tame or wild, ignorant of the functions of an earth-stopper, without a single intelligent idea on the points of a hound, and in a state of utter mental confusion as to whether partridges are driven or walked up to. And inseparably connected with these abstruse problems is the subject of horse-racing. I do not know how things may be to-day, but when I lived in New York horse-racing was not among the pastimes of the Four Hundred, and it was a comparatively rare thing to come across a fashionable New York woman who knew anything at all about it. But in England the turf is one of the greatest, perhaps on the whole *the* greatest, of national sports and interests, just as the Jockey Club, which presides over its well-being, is the most exclusive of all clubs. A knowledge, or a show of knowledge, of the technicalities of horse-racing, of the pedigree and performances and weights of the horses, of the careers of the jockeys, and so on, is absolutely essential to any Englishwoman who moves in the great world. For a large part of English society the year is punctuated by the dates of the meetings at Newmarket, Ascot, Epsom, and Sandown. An American woman feels horribly out of it in this world of universal turfyness, talking a language of its own. Face to face with a steward of a Jockey Club she would be nearly as dumb as any American woman ever can be. To save her from such embarrassments, to put her in a position to compete on an equality with her English sisters-in-law, what is needed is a little preliminary coaching on a systematic plan. Once more my idea of a school to fulfil this office is overwhelmingly justified.

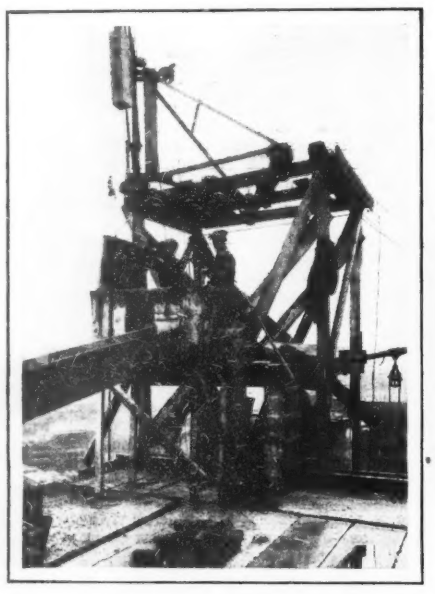
So, too, with politics. At a Fifth Avenue dinner-table one hears politics discussed about as often as Chinese conchology, and, speaking broadly, it is, I think, the fact that outside Washington the American woman of society is not expected to have any views on public questions or to be interested in the men engaged in solving them. But in London, and indeed throughout Great Britain, politics and society are inextricable. Practically all the leaders of the great world are either themselves prominent in the House of Commons or the House of Lords or are intimately related to the men who are. Their wives and daughters are thus committed from the beginning to a personal interest in the topics of the day. With this as

Both from the sporting and the social standpoint

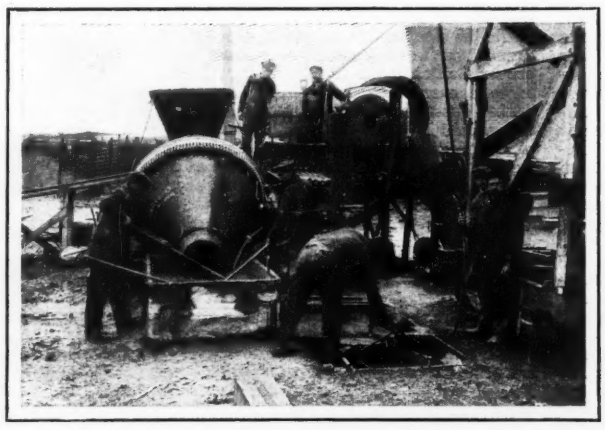
a starting point they are led on to read the Parliamentary debates and to study questions deeply enough, at any rate, to be able to talk about them intelligently. Very many women, of course, go further. They ally themselves with the various women's leagues and societies that operate, often with the greatest utility and success, on the wings of the two great parties. They do what they can to make the social routine the handmaid to political advancement. They form *salons;* they become known as political hostesses; their drawing-rooms and boudoirs are little centers of discussion and a delicate kind of intrigue; and at election-time they hurl themselves into the fray as canvassers and speakers. However high their position in society, it is not, and never can be, so high as to remove them above the sphere of politics. Their sons, brothers, husbands, or fathers are sure to be players in the game, and they themselves are sure to be something more than spectators. Practically all Englishwomen of title are born into politics, hear politics discussed at their dinner-table unintermittently, and meet day by day the men to whom politics is life. A great social position in England inevitably carries with it high political interests and responsibilities. I do not say they exceed the social and philanthropic responsibilities, but they at least equal them. The tradition of playing a part in the government of their country runs through all that is best in English society, and a woman who is born or has married into it and has the intelligence to realize its possibilities soon finds herself in possession of a hobby infinitely more engrossing than any ordinary social diversion. To follow with comprehension the ins and outs of the great game; to mingle freely and on equal terms with the men in whose hands lie the destinies of the British Empire; to be their confidante, their adviser, and their encourager; to "manage" them with the kind of deftness that only feminine diplomacy can achieve; to bring all her mental and social resources to the task of forwarding the political fortunes of the man in whom she is interested; to take part in great decisions and the formulation or guidance of momentous policies; to help in disentangling the personal clashes and antagonisms that lie at the root of most political crises—all this furnishes a clever Englishwoman with an absorbing, permanent, and many-sided avocation. But all this is absolutely remote from the experience of the ordinary American bride. She is unacquainted even with the first moves of the game into which she is so suddenly thrust. She comes over to England and settles down on her husband's estate with no more than the haziest notion of what English politics really is, of what the principal parties stand for, and of the enormous opportunities that lie open to a woman of tact, assiduity, and knowledge.



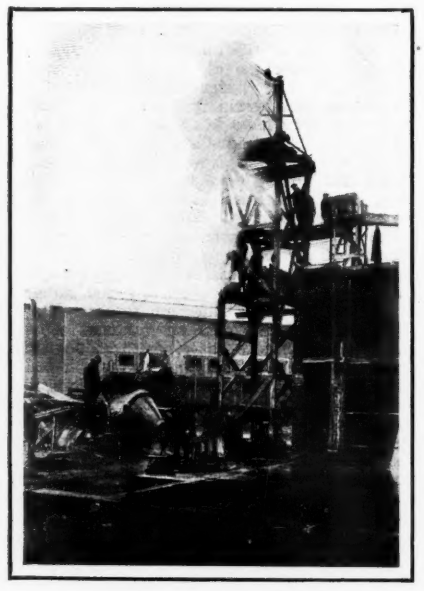
A little preliminary coaching on a systematic plan



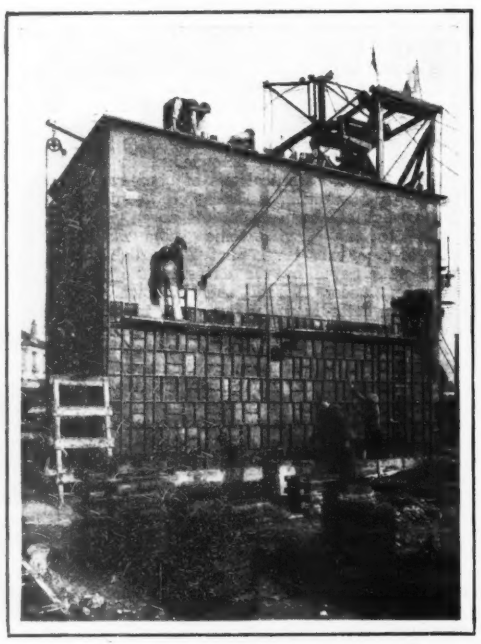
Pouring concrete into the molds



Preparing the concrete

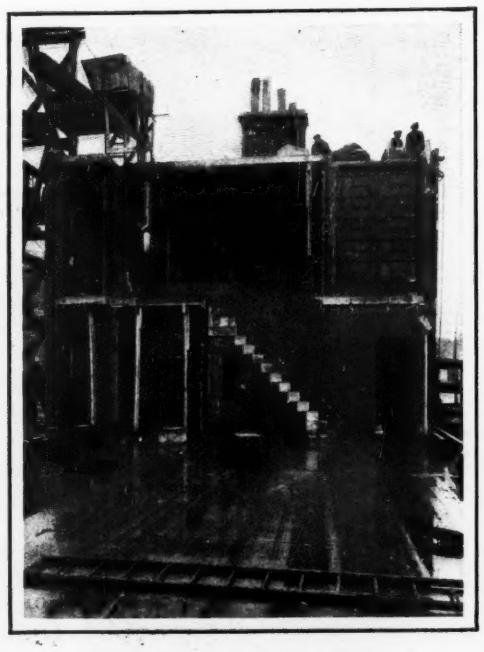


Raising the fluid walls



Taking away molds from the outer walls

Stripping molds from interior partitions



A staircase and adjoining rooms

BUILDING A HOUSE IN SIX HOURS

A CONCRETE HOUSE, SHOWN HERE IN COURSE OF CONSTRUCTION, WAS RECENTLY BUILT IN THE SUBURBS OF PARIS, FRANCE, ACCORDING TO THE METHOD INVENTED BY THOMAS A. EDISON. IT IS SAID TO BE SUBSTANTIAL, FIRE-PROOF, AND INEXPENSIVE

Alfalfa—the Money Crop of the West

WITH the advent of new settlers in the fertile but less thickly settled portions of our Western agricultural country smaller farms are the older. This, in turn, demands changes that will in every way be beneficial to the farmer and to the country at large. Until recently the farmer has had the use of free and unoccupied land, producing free pasture in abundance and hay at cost of harvest, but present increased values have much restricted him in the use of unoccupied land.

No one questions the value of nutritious, wild prairie grass for hay or pasture. On the prairies of the West it is available about May 1st as a permanent pasture; about August 1st it is preserved, and when reduced by pasture use it is not again available until the following May. In other words, its use is for a period of about three or four months in twelve. It then becomes necessary to introduce a pasture that will furnish a longer period of use or seed an additional amount of fall and winter feed. It requires, ordinarily, more acres of wild grasses than tame to support a farm animal. A comparison of the values of tame grasses is entirely favorable to the production of alfalfa. The next five years will find alfalfa firmly established as a permanent product of South Dakota and other Western territory, and whenever this is accomplished land now commanding a price of $20, $25, $30, or $40 per acre will be in greater demand and at prices much advanced.

In mentioning different methods of cultivation, many of them in the same locality, criticism is not intended, but the different methods produce different results and description of them demonstrates that proper methods are the largest factor in the successful production of alfalfa. If a method is in effect that will not produce a profitable result where a different method would produce an average crop, the wrong procedure is more harmful than shown by the loss of the crop, as it tends also to demonstrate that alfalfa cannot be successfully produced on the farm in question.

If upon proper demonstration it is developed that a crop cannot be profitably produced on your farm, devote your land and energy to other lines, but do not condemn your efforts to succeed unless you are satisfied your procedure was right. Some localities are not adapted to alfalfa production, and its production is only recommended where at least an average crop can be secured.

The Breeders' Gazette, which is recognized as an authority, classes any land that will produce alfalfa as worth in value not less than one hundred dollars per acre. Undoubtedly an average crop and a reasonable location should qualify such statement as conservative. In the States of Minnesota, South Dakota, and Nebraska alfalfa production is not an experiment; it can be demonstrated and is demonstrated as a successful production in different localities, but the methods are so unsettled as to add an element of uncertainty to the results, making the average production much less than a proper standard would secure. The method recommended is especially adapted to South Dakota, particularly the western portion of the State, where favorable results will add many times to the present values of land.

It will be necessary to employ care, work, and patience and the use of a small area of land, with repeated efforts, before one is convinced of failure. In covering the proposition of procedure over an area represented by State lines we are not unmindful of the different conditions that exist in different localities; yet our subject does not require exactly similar conditions to admit of similar procedure. One fast rule is fixed: more efficient work to increase the average standard of production and quality, keeping step with progress and business demands, preventing possible discouragement caused by misdirected effort, and removing the production of alfalfa from the experimental stage in the shortest possible time.

The importance of careful and proper selection of ground is apparent. If the crop is an experiment small areas are recommended. The experiment will thus be as complete and usually insures better work and care, and the better crop thus secured insures better future conditions, seed, etc. A subdivision of essential conditions is classed in the following order:

Cultivated land or new breaking.
Condition of fertility.
Preparation of fertilized land.
Soil, sub-soil, and top soil.
Drainage.
High or low land.

Assuming that soil inoculation is not necessary and irrigation is not available on a farm consisting of one hundred and sixty acres, where it is the desire of the owner to produce from ten to forty acres of alfalfa, the owner should secure an average yield for the crop of two and one-half to three and one-half tons per acre on two or three cuttings.

The results of seeding alfalfa on the first breaking of new ground is not generally favorable. The absence of weeds the first year on sod usually makes a good showing, but the root does not usually penetrate below the plow line. On the contrary, it diverges along under the sod and sub-plow line, and the root does not develop vitality or strength to support permanently a healthy, strong plant. The usual result is half as much stand, or less, the second year, and a poor, weak, straggling plant at spare intervals the third year. On the other hand, a well-cultivated, deep-plowed field, with equally favorable conditions, will produce a penetrating, strong, healthy root that in turn will support a healthy, permanent plant. After the first year sub-soil is the important factor, and on sod-seeding subsoil is never reached. Select old cultivated land with proper regard for other necessary essentials and secure a good root and permanent growth. We do not mean land that is not fertile by reason of excessive poor farming, but well-cultivated land that is above the average in fertility.

Condition of fertility and preparation to produce suitable and proper fertility must be observed, and on account of prior use of such land is wholly necessary. Alfalfa requires a fertile soil. While it is admitted that soil that produces very little vegetation without irrigation will produce a crop of alfalfa, the cause of no vegetation without irrigation is not that the soil is not fertile, but arises from other causes, usually climatic conditions. If the soil is not fertile it should be made so and the application of farm support the plant. The method of preparation varies, but on account of the harmful effect of weeds following common farm-produced fertilizer we advocate its application the year prior to alfalfa seeding and the extermination of resultant weeds that have germinated, not allowing them to reseed. Common farm-produced fertilizer will produce weeds, but if treated a year in advance fertility is secured and weeds eliminated to a certain extent. Application of fertilizer can be followed by millet, or the weeds mowed or plowed under before maturity of seed, and after alfalfa is seeded do not hesitate to sacrifice the first year's crop of alfalfa by cutting in time so that weeds will not germinate and get the start of the plant. Results cannot be expected, anyhow, the first season, and the third season the crop and stand should be better than the second year, as it requires about three seasons to secure the best crop.

Top soil of a light variety, not sandy, with light clay sub-soil and not too close to water, is preferable. This soil, if fertile and not sandy, quickens the growth, and the plant is protected by the moisture-retaining clay sub-soil later. Do not select land that is not thoroughly surface drained, and the drainage will settle a high or low land selection. Water standing one day on alfalfa in a depression will affect it seriously; and if it freezes you can depend on a field with spots where the depressions filled up and water froze, and later such depressions will be filled up with a growth of weeds.

The drainage question is the first to consider; and as to high or low land, the extremes are to be avoided. A gumbo element in soil properly cultivated is not undesirable, but it should be thoroughly cultivated and well drained. Farm manure is of great value on gumbo soil; it serves to loosen the soil and to admit air and water. It should be cultivated with the soil and thoroughly worked together until it is well mixed, fine, and uniform. We do not desire to fix a standard including particular soil to the exclusion of others; we simply state our preference after experience on both high and valley land and on slightly different soils.

The Railroad Specialist

By Bruce V. Crandall

IT is not very many thousand years ago that primitive man was in a savage state not much higher or better than that of the wild animals with which he was in daily contact, and upon the killing of which he depended very largely for his food. All the needs of the individual man were supplied by the same individual, and society was an exceedingly simple organization. To-day one man, or a group of men, supplies us with our shoes, another with our food, another with our books, another with the tools with which we work, and so on.

Probably the ordinary traveler never gives more than a passing thought to the operation of a railroad and what it means. Of course, if the dining-car is full, the poor service of that particular road comes in for comment, though the fact that the patrons of a railroad can travel between Chicago and New York at the rate of fifty or sixty miles an hour, and have all the comforts that they have at home, hardly calls for passing comment. Why should it? We are so accustomed to unusual luxuries that most of them have become necessities.

The problems of railway management, operation, construction, and maintenance are too numerous even to mention, but perhaps something as to one phase of railroading will serve to give at least a glimpse of the intricate mechanism of the railway industry. Railroads for the most part buy their cars, locomotives, rails, bridges, and signals. In some few instances the equipment is built by the roads themselves in their own shops, but this is the rare exception and not the rule. To supply the needs of the railroads there has grown up an enormous industry known as railway-supply manufacturing. These railway-supply manufacturers are the specialists to whom the railroads go for a thousand and one things. When the railroads wanted to increase the speed of their locomotives they went to the builders, and if the designing of a faster locomotive was a comparatively simple thing, which it was not, even after that had been settled came the question of safely increasing the speed of trains. How was this to be done? Here again the railroads went to their specialists, the manufacturers of railways supplies, and the problem of safely running high-speed trains was solved in the air-brake. Even the ordinary layman is familiar with the name Westinghouse. But the running of high-speed trains safely is dependent upon something more than the air-brake.

Probably not one man in a thousand, who travels upon a railroad, has any idea that the efficiency of the entire braking apparatus may be impaired by a poorly designed and constructed brake beam. What a brake beam is, and what its duties are, are quite unknown outside of the railroad field, and yet here is a structure, weighing comparatively but a few pounds, that is called upon to take the power of the air-brake and apply it to the rapidly revolving wheels of the train, not occasionally, but hundreds of times upon a single trip. Without it is brake beam, high-speed trains would be impossible.

Nothing illustrates any better the fact that the railway-supply manufacturer is the specialist to whom the railroads go for a solution of their many problems than the work which has been done by the signal manufacturing companies. One has only to stand in the yards of the new Northwestern terminal at Chicago, which represents probably the highest degree of perfection which the railroads have attained in the constructing and equipping of a passenger station, and to compare it with the old station first erected by that road, to realize what a long step has been taken in the bettering of railroad facilities.

It is a simple thing to make a lamp that will burn on your library table, and yet not so simple, after all. But just consider for a moment what it means to construct a lamp that will stay lit in a driving rain-storm, or a snow-storm, or whether the thermometer marks thirty degrees below zero, or summer heat, and with it all stay lit at the end of a train that at times may travel sixty or seventy or eighty miles an hour.

These specialists, these manufacturers of railway equipment, hold exhibitions every year at various places in the country for the purpose of giving railway officers and men an opportunity of noting the progress during the current year. The national association holds an exhibition for a week or ten days each year at Chicago, in the Coliseum and First Regiment Armory, for the purpose of showing new devices, to be used in the track, bridge, signaling, and maintenance departments of railways. At the same time some of the railway associations hold conventions for the purpose of discussing problems incident to railway operation, maintenance, and building. Many of the heads of the large railway systems so fully appreciate the value of these railway appliances exhibitions, that in many instances they pay the expenses of their employees to enable them to make a close study of the equipment which is shown.

To one standing on the outside, and apart from railway operation in all its various phases and branches, to one who sees the railroad question from the public viewpoint, but who at the same time has an intimate knowledge of the inner workings of our great railway systems, there must come, not any question as to why the railroads do not do more, but a constantly increasing wonder as to how it is possible for the railroads of this country to have made the marvelous strides that they have. Undoubtedly the success of modern railroading is due in no small measure to the fact that the railway officer has been intelligent and broad-minded enough to enlist in his work and in his behalf the specialist, the railway-supply manufacturer.

Your Sense

demands a table beverage combining excellence of taste and freedom from harmful ingredients.

The new food-drink

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Made from choice Northern wheat and the juice of Southern sugar-cane, Instant Postum possesses the good qualities of a breakfast cup—purity and engaging flavour.

No Boiling Required

Stir a level teaspoonful (more or less for strength desired) in a cup of hot water—add sugar to taste, and enough cream to bring the color to a light golden-brown. You have **instantly** a palatable hot cup which child or adult can drink freely with fullest benefit.

Sold by grocers—50-cup tin, 30c; 100-cup tin, 50c.

Send grocer's name and 2c stamp for postage for 5-cup sample tin.

"There's a Reason" for POSTUM

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Frisco Lines

St. Louis and San Francisco Railroad
Chicago and Eastern Illinois Railroad

LESS than ten years ago the management of the Frisco Lines inaugurated an aggressive policy the purpose of which was to develop the resources of the territory tributary to its lines. The wisdom of that policy is reflected not only in the growth of prosperous cities, towns, and farming communities, but is further evidenced by the increased gross earnings, which in seven years have increased from forty million dollars to sixty-two million dollars, or over fifty per cent., while its mileage has increased from 6,200 to 7,500, or only twenty per cent. During practically this same period the population of the states through which the Frisco Lines operate has increased from 23,848,045 to 28,228,281.

These results are very significant in another way. They illustrate what a railroad actively engaged in a policy of development can do for a country.

The development work of the Frisco Lines has not been a matter to which indifferent consideration or attention was given, but to the contrary this work has been carried on under the direct supervision of the executive officers and is still being conducted in the same manner. Very few railroads have carried out such a policy on as broad lines as the Frisco. It has, so to speak, been a partner, and not a silent partner, with the farmers, business men, and manufacturers along its lines, and for the purpose of dealing directly with the people along its lines, established an Industrial Department, the sole purpose of which is to promote development, by assisting the people in developing all the resources and all the possibilities of the towns, cities, and farming sections, with the result that during a period of seven years over 3,000 industries have been established and are now in successful operation along the lines of the Frisco. These factories represent practically every line of industry and have for their principal markets the South, Southwest, West, and Northwest, which are the most rapidly growing sections of the country. Each year not only shows an increase in the number of industries located, but a decided improvement in capacity, output, and number of men employed. Rarely, if ever, has any section of the United States offered such attractions to the reliable manufacturer. This sort of development not only means increased revenues for the railroad, but has resulted in the building of substantial cities and towns, giving steady employment to thousands of workmen, who in turn create larger and more profitable markets for the products of the farms.

Such a development as the Frisco has brought about, and will continue to bring about for years to come, would not have been possible without the widely varied resources of the country tributary to its rails. Extending as it does from the Great Lakes to the semi-tropical Gulf region between New Orleans and Brownsville, Texas, the Frisco Lines cover a country amply able to live within itself if it were entirely segregated from the balance of North America, and when fully developed this territory will be easily able to support more than the present population of the entire United States.

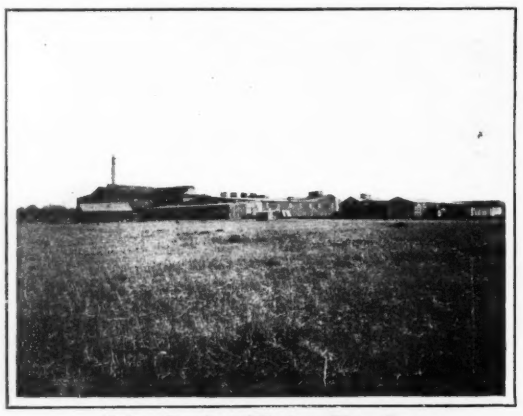
Considering the wide range of products of the farms and factories, the impossibility of a failure over the territory of the Frisco Lines is at once apparent. A better understanding of which will be had when it is known that the largest areas of hard-wood timber remaining in the United States are along the rails of the Frisco, as well as the greatest undeveloped iron ore deposits in the United States. In addition to this, sixty per cent. of the lead and zinc of the world is produced along the Frisco. At the same time the greatest oil and gas fields in the United States are along the Frisco Lines in Oklahoma and Texas. Practically all the cane sugar produced in the United States is grown along, or near, the Frisco Lines in Louisiana and Texas. A very large part of the vegetables consumed in the United States during the winter months are produced along the Frisco Lines in the Gulf Coast country of Texas, where the harvest begins in December. The greatest deposits of bituminous coal in the United States are found in the territory served by the Frisco, and a part of its lines are the greatest bituminous coal carriers west of the Alleghany Mountains. It is also a fact that more than sixty-five per cent. of all the cotton produced in the United States is grown in the states through which the Frisco runs. In addition to these vast resources, the Frisco occupies not only a large part of the farming section of the Mississippi Valley, but also serves the great corn, wheat, cotton, and fruit sections of the Southwest. From these facts it is easily seen what has attracted so many millions of people to the Frisco's territory during the last few years.

No other section has offered the manufacturer superior advantages; none have offered him so great possibilities in the way of rapidly growing markets.

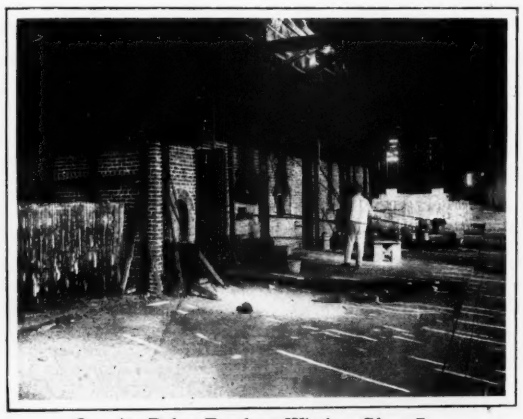
The virgin lands of Missouri, Oklahoma, Texas, Arkansas, and Louisiana have offered and are still offering unparalleled opportunities for the practical farmer. These lands are suited to all classes of farmers, whether they be the wheat growers of Canada or Russia, or the cotton grower of the Gulf States, the corn grower, or the truck farmer, the dairy farmer, or the sugar planter, the fruit grower, or the stock-raiser, all can be accommodated and all can prosper. ***

Factory of Roberts, Johnson & Rand Shoe Company, Cape Girardeau, Missouri.

Fort Smith Wagon Company, Fort Smith, Arkansas.

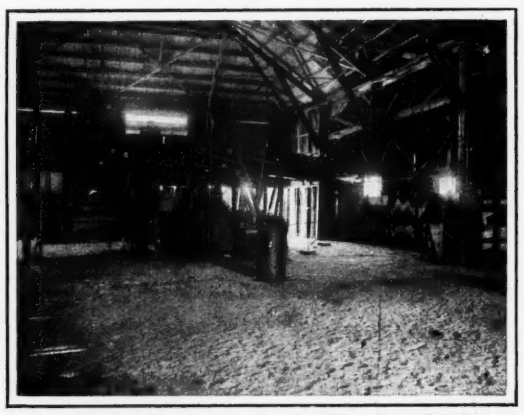


Baker Brothers Window Glass Co,, Okmulgee, Oklahoma.

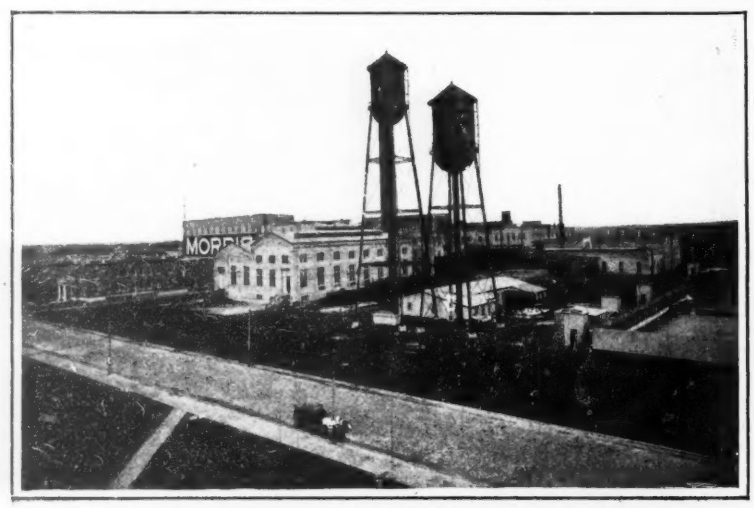


Interior Baker Brothers Window Glass Co., Okmulgee, Oklahoma.

Graham Brothers Bottle Co., Okmulgee, Oklahoma.



Interior Graham Brothers Bottle Co., Okmulgee, Oklahoma.



Morris & Company, Packers, Oklahoma City, Oklahoma,

Oklahoma Portland Cement Co., Ada, Oklahoma,

HELPING THE FARMER

AGRICULTURE is the foundation for the success of any section—any country. If the farmer is prosperous, so is the country, and the Rock Island Lines are going to the bottom of the matter by educating the farmer and showing him the road to success.

Farming in the plains region of the Southwest is being established on a new basis as a direct result of this educational work with the co-operation of Agricultural College experts.

The Western half of Kansas, two-thirds of Oklahoma, Northern and particularly Northwestern Texas, Eastern Colorado, and Northeastern New Mexico, is an immense area which includes what was designated on maps of thirty and forty years ago as the Llano Estacado, or Staked Plains, and still earlier as the Great American Desert. It never was a desert. There is no part of this region that cannot be made productive to a greater or lesser degree. Its boundaries cannot be clearly defined, for one creeps upon it gradually as the rise of the land takes one towards the Rocky Mountains and away from the great river valleys, and the rainfall grows, consequently, lighter.

It is not all Dry-Farming territory, for that term applies to regions having a rainfall of 20 inches or less per annum. Coming east from the 20-inch line, about the 100th meridian, to the point where the rainfall is even as high as 30 inches, there are great areas of farming land that are not profitable as exclusive grain farms.

Farming to make money out of wheat or corn is never sound business, although often temporarily profitable. Farming with live stock as the basis and grain as a by-product, when intelligently followed, always pays, even where grain crops are reasonably sure when grown for the cash revenue alone. Grain-farming robs the soil. There must be live stock to restore fertility, through manuring, regardless of the profits in the animals when sold for slaughter.

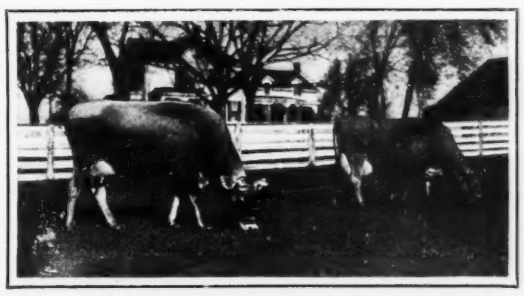
Kafir Corn Field of W. M. Gilmore, near Topeka, Kansas

After crossing the 30-inch rainfall line, wheat-farming becomes particularly precarious. There is a bumper crop, say, once in five years, but two of the other four years may not even return the seed. Consequently, the farmer whose reliance is in wheat has no permanent basis of success, though one wheat crop often pays for his entire farm.

No one ever tries exclusive corn-farming. The corn-grower always has some animals to feed. The corn-growers who fail are those who try that grain on uplands in Kansas and Oklahoma, where the hot winds wither the plant and it dies of thirst. No one can absolutely define the limits of the corn area. Certain acclimated varieties are grown in altitudes of over 6,000 feet, where there is scarcely 90 days between killing frosts. There are farms in Kansas and Oklahoma where the bottoms can be successfully planted to corn, but where the evaporating hot winds make the upland portions unsuitable for that grain.

Over twenty-five years ago the United States Department of Agriculture procured seeds of certain drought-resistant grains from Africa and Asia. Among them were Kafir and Milo (often called Kafir Corn and Milo Maize), but the shorter terms are distinctive and easier. Kafir and Milo were found suitable to the plains region in years when wheat and corn would fail. To-day these two crops are in good use in portions of the Southwest.

To this pair there is being added the Spanish Peanut, which owes its introduction to the West to two men—Professor W. R. Beattie, an expert in the Bureau of Plant Industry at Washington, and Professor H. M. Cottrell, Agricultural Commissioner of the Rock Island Lines, who took up the work where Beattie's researches left it and brought the scientific data before thousands of Southwestern farmers. The Spanish Peanut is a small variety, the vines of which grow straight up like Clover or Alfalfa, instead of clinging to the ground, as do the vines of the Virginia nut. Its chief peculiarity is its adaptability to various climates and soil conditions. It thrives near sea-level in Louisiana under fifty inches of rainfall and will make a crop at 4,000 feet, where the rainfall averages but 13 to 15 inches. In the Pan Handle of Texas, it has been used as a hog-fattening material with success for some years. For a year, the Agricultural Commissioner of the Rock Island Lines preached Spanish Peanuts, and as a result thousands of acres were put out this spring. The known area of Peanut culture will be greatly extended, and if the crop turns out as expected in the higher sections of the Dry Farming region, it will add a feeding ration that will double the productive capacity of the farms from a live-stock standpoint.



Dairy Cows Keep the Milk Money Coming Daily

And that is the crux of the situation—LIVE STOCK. That means production of pork, beef, and milk, particularly until the small farmer can add beef stock to his dairy herd. Dairy cows keep the milk money coming daily. There is no limit to the market for milk in the form of cream for domestic consumption or the manufacture of ice-cream, butter, and cheese.

The first essential for live-stock and dairy farming is fodder crops. The second is Silos for the preservation of the green feed for winter use or for feeding when pastures wither in the year of drought.

The Southwest was settled in haphazard fashion. There was no clearly defined idea in the minds of most of the new settlers as to the character of their farming. They followed the line *native* to the section from which they came, except that they had in the boundless prairies vast expanses of land that, when put in wheat, looked like profits without much labor. Not until the Colleges and the Railroads got into the field with their educational campaigns was there apparent any decided movement toward diversification of crops and live stock. It is impossible to fix a definite figure for the increase in production due to the methods adopted by the Rock Island Lines and other Western railroads in their campaigns for agricultural advancement, because the effect is cumulative. In a few years, freight receipts will show the difference. To-day it is yet a question of individual prosperity for this and that man who takes the advice of agricultural experts. But do they take the advice? Yes! While no complete canvass has ever been made in territory traversed by farm education trains, voluntary testimonials are frequently received by railroads from those who have been benefited. Recently the Secretary of the Board of Trade at Jacksboro in Northern Texas wrote to the Agricultural Department of the Rock Island Lines that the corn crop in that county in 1911 had been a failure, but that the farmers had planted Kafir and Milo (drought-resistant grain crops), which had meant thousands of dollars to the farmers of the county. This was a direct result of lectures given on the Dry-Farming Train that visited Jacksboro in April, 1911. All over Western Oklahoma and the Pan Handle of Texas were found farmers who had planted these drought-resistant crops and who were thus able to feed them through the winter to cattle and horses which would otherwise have had to be sacrificed in the fall. Thousands of acres of these crops were put out as a direct result of the missionary work done on the Dry-Farming Train and the most severe winter the United States had known in thirty years passed without serious stock losses for those who heeded the lesson. Their example will be the means of inducing their neighbors to follow suit. Reforms by educational methods are naturally slow, but the farming revolution in the Southwest is being hastened by economic factors. The summer of 1911 was particularly dry, the winter that followed unusually cold, with heavy snowfall. The moisture was an undisguised blessing: the cold following a poor cropping season drove many farmers out of the dry-land region in moving-wagons and others suffered. In nearly every instance it was the man who had no dairy cows to milk who was compelled to give up the struggle. The Rock Island Agricultural Department has records of farmers who took in $50 to $65 per month for milk alone during the winter months. These same farmers also had chickens that brought in egg money. Some of them had potatoes, other vegetables, and canned fruits in the cellar, because they kept up an acre of garden through windmill irrigation during the summer.

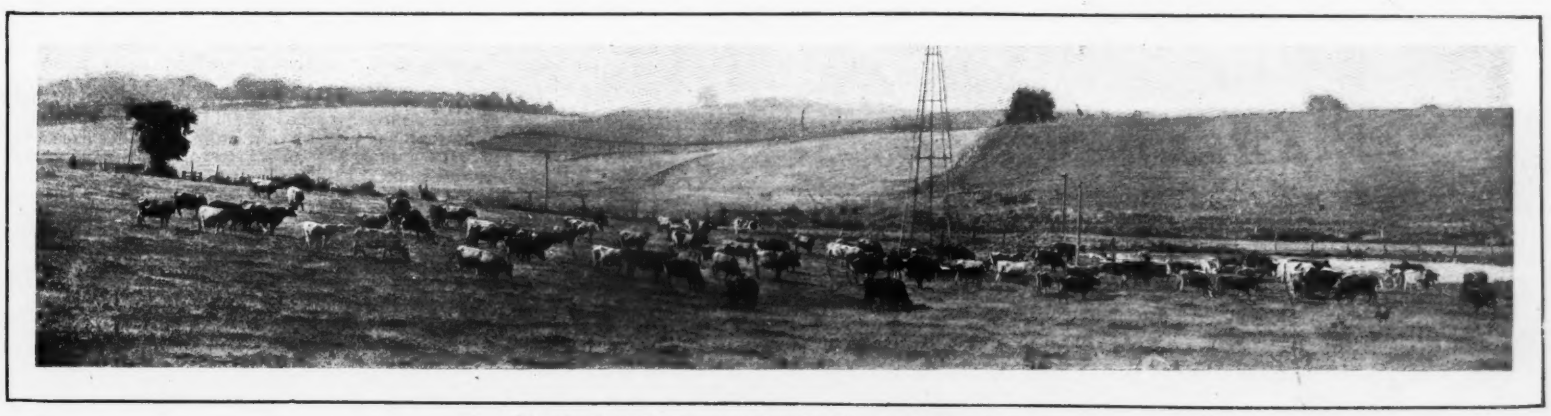
Now their Kafir and Milo for feeding dairy and beef cattle, Silos to preserve the feed in its green, succulent stage, Spanish Peanuts as the important fattening ration—this and thorough tillage methods are the salvation of the dry-land farmer and this is the gospel preached by the missionaries of the railroads and the colleges. The railroad does the lion's share of the work and foots the bill. Experts are engaged, and every possible means of reaching the farmer placed at their disposal; not only this, but they furnish absolutely free of charge to the various States entire trains which are manned by the State College experts who do the lecturing. No stone is left unturned to induce the farmer to properly handle the soil and plant crops suited to conditions in each section. It's a big, expensive job, but it's worth while.

Throughout the territory served by Rock Island Lines every phase of agriculture is carefully studied and needful information and real help given. The opportunities for the homeseeker are truthfully set forth and the newcomer is the object of special attention. Vast sections of undeveloped land are being brought under cultivation; towns and cities are growing; new industries are needed and capital is finding profitable employment.

The "Rock Island States of America," rich, fertile, and promising, give ample scope for the successful cultivation of every sort of crop and investment in various enterprises, and the homeseeker and investor is certain of a hearty welcome and close co-operation.

The Rock Island Lines publish for free distribution among farmers "The Southwest Trail," a magazine devoted to the spread of the new agricultural idea. This publication specializes. Each issue is devoted solely to some topic of vital worth to farmers in the territory served by the Company. Some months ago the broom manufacturers of the country held a convention and decided that the growers needed advice on the line of producing better broom corn. The Rock Island joined in this campaign, sending its investigators into the growing districts of the Southwest to find out just what was wrong with the industry and what could be done to help it. A special number of the "Southwest Trail" took up the subject from every angle. Something like forty thousand copies of this were distributed and the result was a demand for more broom-corn seed, greater than during any previous season and a better preparation of the soil by growers. The effect will be felt this fall in the larger proportion of first-class brush. So it is with other topics. The magazine has in the same exhaustive way covered Milo, Kafir, Hogs, Water Development, Dry-Farming Homes, Seed-corn Testing, etc., giving the farmer the benefit of scientific research practically applied, and all without cost to him. ***

Fattening Hogs for the Market is One of the Most Profitable Lines of Farming in the Southwest



Live Stock is the Crux of the Situation in the Southwest

The Golden Northwest of Yesterday and Today

Isabelle Carpenter Kendall

AGRICULTURE is the wealth of the nation, and if wisely managed the soil will support the nation with little outside help. But while we have a wealth of resource in the land, agriculture in this country is still far from the point where it can support our ninety-six millions of people, because it is not wisely followed and because there are not enough people occupying the land. The question of the hour is how to get enough people into the business of farming to take care of the rapidly expanding population in the cities and the constantly increasing demand for foodstuffs all over the country.

Immigration into the northwest onto the prairies and plains of our plateau and mountain states has been going on for more than half a century, but there are still more unoccupied than occupied lands, and greater opportunities, consequent upon the modern scientific methods of handling the soil, only awaiting an industrious and intelligent farming population. The extent of the unoccupied acreage is sufficient to support this nation, were it all under cultivation; and, not only to support us, but to give our products a selling place in the markets of the world.

The development of the so-called American northwest, consequent largely upon the colonization efforts of railroad companies, and the story of its growth in the last sixty years, together with a record of railroad building through the west, will serve to show what has been accomplished, and indicate in a measure the work still to be done. Railroads have been the chief factors in the development of the past, and it will be seen that the necessity still exists for the continuation of their immigration propaganda and that the people must still be helped in every way possible to find homes and settle upon the land.

In 1849, the Chicago, Milwaukee & St. Paul Railway came into corporate existence with one hundred and five miles of railroad in central Wisconsin, largely built and financed by the farmers of the territory, who had come "out west" and taken up land in the wilderness.

Those few miles of strap iron were gradually extended as immigration and development and the industries of the infant communities seemed to warrant. At that time, immigration preceded the rails, largely because railroads were new and looked upon doubtfully. Canals and waterways were supposed to have answered the transportation question. Extensions and additions to the young railroad finally brought it to the Mississippi River, and traffic was taken from the waterside into the new northwest by boat. Vague stories came back during those years of a vast fertile country beyond the Father of Rivers and gradually the number of adventurous pioneers who went across in prairie schooners grew until it was necessary to give them a railroad. In 1866, the Milwaukee & St. Paul made its first venture into Minnesota and a few years later it entered St. Paul and Minneapolis, which were becoming towns of note and important trading centers. The country into which the newly fledged railroad was projected was virgin prairie and settlement was the slogan. Then began the era of the rails preceding the settlers. Foreign immigration assumed tremendous proportions. At least it was considered tremendous in those days. It came from New York or the Canadian ports, to Detroit, Grand Haven, and across the lake to Milwaukee; and the arrival of a boat in Milwaukee was a Castle Garden scene on no very small scale. The railroad emissaries were always present—interpreters, immigrant agents, passenger men and even presidents and general managers—so important an event was the arrival of so many new citizens and so many prospective patrons of the railroads.

The value and feasibility of developing local territory is now well understood by all railroads, and they do not hesitate to throw their lines into new and comparatively unsettled territory, trusting to their own energies to develop a sufficient local traffic to make their lines pay. This has been the policy of the Chicago, Milwaukee & St. Paul Railway, and, as has been shown from its beginning, it has always been near to the edge of civilization and settlement; and it has constantly expanded toward the north and west. In the history of Wisconsin, Minnesota, Iowa, and the Dakotas the development work of this railroad has been no inconsiderable factor; and within the last five years it has crossed Missouri and completed its Pacific coast extension, the Chicago, Milwaukee & Puget Sound Railway. This new line was pushed into comparatively new sections of South and North Dakota, Montana, and Idaho; it enters Washington in the heart of an old and fertile wheat country; thence it turns directly toward Puget Sound, crosses the Columbia River at the mouth of Crab Creek, in the midst of an enormous section of very fertile land, which under irrigation has no limit to its producing power. West of the Cascade Mountains, in western Washington, it serves some of the finest and most productive agricultural sections on the continent.

Wheat and Corn Field Near Bowman, S. D.

The work of opening the unsettled portions of this immense territory to an agricultural population was commenced by the railroad company almost as soon as the definite location of the line had been made. In 1906 the country along this route, in the Dakotas, west of the Missouri River, was the Standing Rock Indian reservation and free government range. Since then the reservation has been opened to settlement and every quarter section of farm land in a belt ninety miles long and over fifty miles broad has been filed on, and thousands of acres put into crop. Scores of new towns beginning with a few tents on the wild prairie, are now populous, well built and prosperous. Their populations run from 500 to 2,000, and all have good schools, excellent markets and commercial facilities, and most of them public water and electric-lighting systems. The contiguous territory in Montana, Idaho, and Washington has made correspondingly interesting progress. Homesteaders have filed rapidly, and in one district especially—the Judith Basin, in Montana—where at the advent of the railroad there were about 1,500 square miles of government land, there is now none, and farm lands are in good demand throughout that valley, at from $20 to $40 per acre.

Records such as this will perhaps convey the impression that the country along the new line had by this time become pretty well filled up, but when one considers fifteen hundred miles of distance, and a wide tributary country, the statement that there is still plenty of opportunity out there for settlers and industrious farmers will not be surprising, and we may glance briefly at the kind and quality

Harvesting in the Three Forks Country, Mont.

of the country traversed by the new transcontinental railroad. Leaving the Missouri at the mouth of the Grand River, the line runs westerly across the northwestern and southeastern corners of South and North Dakota, respectively, for a distance of nearly two hundred miles. The land adjacent and tributary to the railroad is natural grain country. All small grains, root crops, and corn, timothy and alfalfa do exceptionally well, while the climate and natural pasturage are favorable to dairying and stock raising. This section, furthermore, is underlaid with a fine quality of lignite coal which solves the fuel problem and makes an especially inviting prospect for manufacturing interests.

In Montana, agricultural possibilities are practically limitless along the entire distance of this line. On the eastern plateau, in Custer and Rosebud counties, irrigation will produce any crop known to the temperate latitudes. Dry-farming or the so-called Campbell system has been practised with marked success on the benchlands, and in order to as much as possible encourage this method of cultivation, homesteads in Custer County are 320 acres, which gives the usual 160 acres of tillable land each year. Montana's mining interests represent an annual output of over $10,000,000, and as a mining community produces no foodstuffs, there is a market right at hand for all that the adjacent agricultural valleys can produce; and of the great extent of available territory in Montana, for garden truck, fruit, grains, and dairy and poultry, that along the line of the new railroad has proven itself exceptionally desirable.

As a grain-producing state Montana has astonished the world, and its many productive valleys and plains have yielded prodigious crops of wheat, oats, rye, and other small grains. The state has a record of producing more wheat per acre than any other state in the Union, and statistics for ten years show that the average yield of this grain, for that time, in Montana, was 26.7 bushels per acre, while for the same period Minnesota's average was 14.1, etc. Oats make an average yield for ten years of 41.2 bushels per acre, while Illinois's showing for a like period was but 32.6. The other grains make the same remarkable increases. Alfalfa is another of the banner crops of the state, and the quality is so fine that Montana alfalfa seed is in demand at high prices. Fertile lands of this character are general throughout the valleys of the state, and of those which make wonderful records along this line are the Musselshell, Smith, Gallatin, Madison,

Grain Fields and Orchards Near Rosalia, Wash.

Jefferson, and Deer Lodge valleys, east of Missoula. West of that city the country is opening to settlers and is showing the same degree of fertility as the more easterly sections.

In Idaho, where the line crosses the Cœur d'Alene country and traverses the valley of the St. Joe River, the tributary lands are alluvial, and as fertile as the Nile Valley; and the protection offered by the lofty ranges of mountains that nearly surround this valley makes it possible to produce immense crops of garden truck and fruit. On the St. Joe bottom lands, forage crops are exceptional and the country is well adapted to dairying and poultry raising. This section has always shipped much of its foodstuffs from the east, and does yet, while thousands of acres of highly productive land, in close proximity, are lying idle. Entering eastern Washington, the new line traverses the heart of the Palouse wheat lands, thence into a vast stretch of volcanic ash soil, which with irrigation produces almost without limit. The land is similar to that of the wonderful apple-growing sections of the state, and when the various irrigation projects which have been started through the efforts of the railroad immigration interests are developed, the productive capacity of this region will be second to none in Washington.

West of the Columbia River is the great Kittitas Valley, one of the most beautiful and fertile sections of the eastern part of the state. It is devoted largely to commercial orcharding, but any class of farming succeeds well here. The markets for all Washington produce are unsurpassed and the splendid transportation facilities make this portion of the state one of the most desirable places in the United States.

Settlers in Washington, as in other northwestern states, have the inestimable advantages of the best of schools, colleges and those accessories to the refinements of life which belong to highly civilized communities. Every town and most of the country districts enjoy the modern conveniences and the telephone and electric light may be in every farmer's home if he wishes to have them. Indeed, the modern and progressive farmer in the west is in every particular as well placed with regard to educational advantages and opportunities for social advancement as his brother in the east. Good roads prevail generally, even in the mountains, and a large number of farmers own automobiles. That indicates with some clearness the profit to be made in agriculture in the west.

The lands west of the Cascade Mountains, fronting on Puget Sound and on the Pacific coast, are as prolific as any in the northwest. The climate is so generally affected by the influence of the Japan Current that the temperatures, winter or summer, vary but little. The land is practically all "cut-over," and most of it is still to be cleared of the stumpage; giving low prices and increasing the available opportunities.

While immigration to the northwestern states has gone forward steadily there are still sections of the middle west open to settlers, and among these are lands of great promise in northern Wisconsin and the upper peninsula of Michigan, where the opportunities for agricultural development are as great as any in the far west. These localities, practically but twelve to fifteen hours by rail from Chicago and other central distributing points, will become highly cultivated gardens, dairy farms and orchards. Their fertility is unquestionable. The soil is rich with centuries of hardwood timber growth and is adaptable to any of the crops of the temperate zones. To one unacquainted with that locality it sounds like agricultural heresy to proclaim these northern latitudes fit for fruit and berry culture, and for variety and fine quality of vegetables, but such is the fact. Northern Wisconsin and upper Michigan can and do grow phenomenal crops of apples, berries, garden stuffs and all that the city market demands, while conditions are unusually favorable for modern sanitary dairying and poultry raising. Potatoes and all forage and root crops are staple and clover is so abundant that this region has been called Cloverland.

Most of these northern lands, like those of western Washington, are "logged-off," and still in a wild state. They can, therefore, be acquired at reasonable prices, and even with the cost of clearing, the net profit from every acre richly rewards the farmer for his efforts. ***

TRANSPORTATION *and its* PROBLEMS

By

CLEMENT STUDEBAKER, Jr.

SCIENTISTS, laboriously working through the slow geologic strata, trace human endeavor back some fifty thousand years. Time was when skin-clad men, flints in hand, hewed rough delineations of their daily occupations on the walls of caves. Recent discoveries in France show mural pictures of saber-toothed tigers, mammoths, and queer beasts impossible to define. In one of the caverns is a rude drawing of a cart. The wheels are apparently sections of a tree, connected by a rough axle. Two men are straining at the pole on which the result of the day's hunt is lashed. The deer's head hangs far down the pole. The entire drawing has an atmosphere of life and action impossible to define, although the hand that etched it was dust ages before the pyramids were conceived or platformed Nineveh rose to azure heights.

It is altogether possible that this cavern sketch represents the first efforts at transportation. History does not record when wagons began to be used. The kings of Assyria drove war chariots to victory over many a field. Glazed bricks found in the ruins of Asshur depict war chariots with fringes of freshly severed human heads. Menes, the mythical king of Egypt who founded Thebes, hunted in a chariot—the first, by the way, in which richly carved spokes are shown. Babylonians, Medes, Persians, Phœnecians, all had vehicles for war and peace, drawn by horses and oxen. In fact, transportation is coeval with civilization, and as civilization has progressed so has transportation.

Students of economics state that the three fundamentals of civilization are food, transportation, and communication. Food being the first and most essential requirement, the ability to transport food from place to place, and the ability to make food wants known across vast distances, complete the first cycle of human requirements. As civilization has advanced railroad trains and swift steamships convey food from one part of the earth to another. Famines are well-nigh impossible. The deficiencies of one country are met by the overplus of another, and the nations of the earth are held together and made one family by the facility with which foodstuffs are exchanged.

The history of transportation in the United States would make a romance the like of which has never been written. The network of railroads, the story of their building, the development of a new country, make a brighter page and a bigger page than the history of Imperial Rome can show. And before the railroads came the unending procession of wagons, "prairie-schooners," that gave an empire to the white man and marked with heroic deeds the winning of the West.

In the early history of the United States—when the Republic was in the making—the name of Studebaker is inseparably connected with transportation. Long before the colonies rebelled at taxation without representation—in 1736, to be exact—the name "Studebaker" appears on the passenger list of the good ship *Harle* from Rotterdam to Philadelphia. The family settled in Pennsylvania—then the frontier—and in 1798 Peter Studebaker and Peter Studebaker, Jr., were paying taxes in York County, Pa. The two Peters were wagonmakers. So was John, the son of Peter, Jr., and in John centers the real beginning of the House of Studebaker and its tremendous growth.

The personality of John Studebaker is not so remote as to escape the probe of authenticity. He was a good blacksmith, but a better wagonmaker. The owner of a Studebaker wagon boasted about it. Advertising was an unknown factor in the days of John Studebaker; but he modestly wore the precedence accorded by word of mouth, and as the fame of his wagons spread he expanded his business and built more and more wagons until he had won a competency, and, as times then were, a comfortable fortune.

Then came the desire to see more of the country he claimed as his birthplace, and in 1835 John Studebaker set out on his travels with his wife and six children. Among the children were two sons, Clement and Henry, the first named destined to win a country-wide reputation. After the long journey across Pennsylvania to mid-Ohio, John Studebaker settled at Ashland, Ohio, built himself a blacksmith shop, and found that his fame had preceded him. The reputation of Studebaker wagons was known, and the demand was greater than could be met. With the years came three other sons: John Mohler, Peter E., and Jacob F., who with Clement and Henry were destined to establish the House of Studebaker and all that it means to transportation.

The House of Studebaker, thus unostentatiously founded, met ill fortune in 1837. John Studebaker endorsed notes for a neighbor. The panic of 1837 came. The neighbor was unable to pay, and John Studebaker lost his all. He sold his big farm and rented four acres which he optimistically called "Pleasant Ridge," and commenced over again. With the aid of his sons, John Studebaker worked until every dollar of his indebtedness was paid. The family was closely knit by this train of circumstances. The sons made the struggle their own. On one occasion they drove fifty miles to work as farm hands. The eldest received eight cents a day, the next older fifty cents, and the youngest twenty-five cents. Their joint savings amounted to sixty dollars, and this sum they turned over to their father upon their return.

With characteristic independence, soon after attaining their majorities, the elder two sons, Clement and Henry, left the home at "Pleasant Ridge" and traveled overland to South Bend, Ind., very close to the Michigan line. Here for a time Clement taught school, working Saturdays in a local blacksmith shop for fifty cents a day. Little by little the boys managed to save, a dollar here and a dollar there, and in 1852 the firm of H. & C. Studebaker began business in a one-story frame shop with a total net capital of sixty-eight dollars.

During the first year the firm turned out two wagons. Incidentally one of those wagons was in service for thirty-three years, indicating that the reputation for sturdy workmanship enjoyed by John Studebaker had descended on his sons. In this modest little blacksmith shop the House of Studebaker came into being. The fame of Studebaker wagons grew and grew until the original output of two wagons a year looked very small indeed, and more and more men had to be employed as the fame of the Studebaker wagons spread. Henry was by nature a farmer. He wanted to get back to the farm, and his place in the firm was taken by John Mohler Studebaker, who had heard the call of the Far West during the excitement attending the discovery of gold in California. John Mohler was possessed of a few hundred dollars when he came to South Bend; but over and above his dollars he had a fine imagination, and as he saw the long strings of wagons ever moving westward, his was the knowledge that honestly built Studebaker wagons had found a market far beyond local demands.

With a newly organized business the brothers set to work. Peter E., who had been storekeeping in Goshen, Ind., appeared. Then came Jacob F. Clement, the master mind who organized and whipped into shape the manufacturing department, John Mohler became general executive, and Peter E. established the first depot for the sale of wagons at St. Joseph, Mo. Here were outfitted the wagon trains which bore the historic motto, "Pike's Peak or Bust" on their canvas paulins, and the larger number of wagons in the trains were Studebaker wagons which didn't "bust."

The business outgrew its swaddling-clothes. The demand for Studebaker wagons was constant from all parts of the country. It was a new country. Give us wagons, wagons, and more wagons came the cry, and the House of Studebaker labored day and night to keep pace with the demands. Then came the Civil War. And the army had to have wagons. Mules by fours and sixes dragged Studebaker wagons through Southern swamps. Ammunition, food, clothing—the demand was constant—and Studebaker wagons did their part in keeping the Union armies in the field. Then came a fire, and the frame structures of the House of Studebaker were swept away. They were built again—this time of brick—and the Studebaker pride rose high, and bigger factories and more of them were erected.

And more and more wagons were built. And they were good wagons. The reputation of the house grew. Then came more wars—wars fought on foreign soil—but the fame of the Studebaker wagon had become world wide, and the armies of England and France and Germany, of the Turk and of Austria, clamored for Studebaker wagons because they didn't break down and did give service that surprised foreign wagon-makers. In fact, there hasn't been a war fought since 1870 in which Studebaker wagons haven't been used. Turkey used quartermaster wagons in its futile struggle with the confederated Balkan States.

And to-day—the little blacksmith shop where two wagons a year were made has grown until it covers over 100 acres; 4,000 skilled artisans are employed; over 100,000 wagons a year are turned out; a train of freight cars is needed every day to transport wagons and pleasure vehicles to all parts of the United States; there are 5,000 dealers in Studebaker products in the United States, and scores scattered over the face of every civilized country. The details of the business require the services of a small army of clerks and salesmen—and all within sixty years. Does any country outside the United States offer such opportunities?

And now automobiles. So long as the automobile was in the experimental stage the House of Studebaker held aloof. It is not their habit to experiment. When the automobile became an assured factor in transportation, then, and not until then, did the House of Studebaker begin their manufacture. And with what result? Twelve huge factories in Detroit; 50,000 cars a year; 2,500 dealers to handle the Studebaker cars; offices and salesrooms in all the countries of the earth; a national service insuring co-operation with every driver of a Studebaker car; $750,000 a year for advertising. Sixty-five million dollars worth of cars promised for 1913, and all from the little blacksmith shop in South Bend, and the imagination of a few men who foresaw the possibilities and what was meant by the word "transportation." ***

Plowing Thirty Miles an Hour

By GEORGE MURNANE

Rumely Oil Pull Tractor pulling a 6-bottom plow and harrow

THE making of bread is a world problem, and the power problem, as incident to the bread one, is most important. More power goes annually into pulling the plow than would run all the factories and all the railroads of the world. There has been more work and less efficiency in farming than in any other form of industry. Every improvement that tends to make farm work easier, to make the earth more productive, or the expense of tilling the soil less, is a saving to all the people. It means that the necessaries of life will be less costly. It means less expensive living to every one.

Man bore the labor of industry in the beginning. Gradually the burden has shifted, first to the animal, then to the machine. Watt's contribution to power has revolutionized industry. The farm alone of our big industries retains man and animal power, and here more than any other place, is a substitute needed.

To turn a single acre of land requires 8¼ miles of furrow travel. In plowing 4½ square miles, the man and horse must draw their load a distance equal to the length of the equator.

Most costs begin with the plow—bread, meat, vegetables, fruit, sugar, rice, cotton, linen, leather, etc. One-eighth of the United States is plowed every year—almost 7,000,000 farmers plow 40 acres each—280,000,000 acres—twice the German Empire. For every loaf of bread 48 square feet of land must be plowed. Six hundred and eighty million bushels of wheat were produced in 1912. Replacing man and animal power with the most modern machinery would mean 10 cents a bushel saved—a $68,000,000 burden lifted from the back of the nation.

On the farm the horse has been the substitute for man power, and a poor one. He eats 10 pounds for every hour he works. He has only six hours a day of endurance. Thomas Edison has said, "A horse is the poorest motor ever built." One acre out of every 5 plowed goes to feed the horse. The horse eats up a total acreage equivalent to all Iowa, Illinois, Michigan, and Ohio. The yearly tax for sickness among horses is appalling. A plague struck Kansas last year—20,000 horses died—a loss of $3,500,000.

The tendency of farming is toward machinery and away from horses and man power. We have seen a great transformation recently—from horse to tractor, flail to separator, pitchfork to baler, milk pan to cream separator, single plow to gang plow, hoe to soil packer, and so through the line of farm power requirements.

The work that can now be done on a farm by a few men with power machinery is equal to the efforts of an army of men and horses in the past.

By turning twelve furrows at a time with a tractor and a gang plow—30 miles of furrow per hour can be plowed. At Purdue University, recently, 3 tractors, pulling 50 plows, plowed at the rate of 125 miles of furrow in one hour.

And then there is the human side. The farmer, in using machinery instead of muscle, betters his own life. He works more with his brain, less with his body. He has time to appreciate the better things of life. His sons receive educations—because he can afford it. His wife becomes less of a drudge—more of a woman. The hours that she spent doing a drudge's work are lessened. She, too, has a chance to live. From being the most pitied portion of our population, the farmer may become the most envied and prosperous.

To this problem of lifting from the farmworker the curse under which he has labored for years, of substituting the power of steam and liquid fuels for man and horse, the Rumely Company of La Porte, Indiana, has set itself.

The Rumely Company had a foundation which has fitted it admirably to sympathize with and work out the power problems of the farmer.

Meinrad Rumely, the founder, as a boy in Baden, Germany, knew what it meant to thresh wheat with a flail, and winnow it from the chaff by hand. As a young man, driven out of his home land in 1849 because of state troubles, he came to America, his mind filled with the drudgery of peasant life. He worked in Ohio, in a shop where crude machinery was built, that took the power of a horse and made it separate wheat from straw. He finally set out to find a location of his own, his whole pent-up ambition being to make a threshing-machine that would forever remove the burden of the flail.

Afoot, he tramped across Wisconsin, Iowa, Missouri, Illinois, and Indiana, visiting many towns, among them La Porte, Indiana, to which place he later returned and set up his little blacksmith shop to work out his dream. Three years later he built three threshing-separators, and in another three years came the crowning day, when his

M. Rumely

Rumely Separator won the first prize medal over thirteen other threshing-machines at the United States Fair in Chicago.

The great Civil War began taking men from the farm; but the work of the farm must still go on. Machinery was needed to replace men, and the demand for Meinrad Rumely's threshing-machines increased until the blacksmith shop became a big factory.

The machines were sturdy, with a Dutch appearance that amused competitors, but satisfied purchasers. One of these competitors, now a prominent editor, bewails the fact that in the seventeen years he fought for business with Meinrad Rumely he never got back a Rumely Separator in trade.

Population was increasing faster than yield. Foreign demand for wheat called for the sudden turning of thousands of acres more than could be plowed and tended with the horses at hand. Then steam—mechanical power—was called to the aid of the American farmer. Some men lost years waiting for the supposed fancy to pass; but those with vision, who saw the future needs of Europe and our own cities, who knew the limitations of animal power, and who applied to the farm the same analysis that they gave their own businesses, saw that mechanical power must bring reorganization to the farm, as it had already done in manufacturing and transportation—the other two fundamental human industries. The many friends Meinrad Rumely had made through the sturdiness and reliability of his threshing outfits demanded these same characteristics in other lines, and Rumely began making steam threshing outfits to meet these demands.

The blacksmith shop of Meinrad Rumely developed into a huge industry. But the old idea of sturdiness and honesty in machinery was still uppermost in the minds of the Rumely Organization. The business passed from Meinrad Rumely to his sons and grandsons, a bigger Company, but with the same idea as to how machinery should be built.

The Company grew big, but even large factories are prosperous only when workmen are continually and pleasantly employed, and when clients can depend on one house to supply equally well their every need in a certain field.

Plowing and threshing come at certain seasons of the year, and at other seasons salesmen must be idle who sell only plowing and threshing outfits. The complete organization must have a varied line of machines, so that factory and salesmen can be busy throughout the entire year.

With this in mind the new Rumely Company began to develop a complete line of machinery just as fast as they could add those machines that would equal in every way the goods on which their reputation had been built.

A far-sighted policy of development was laid down, and for the first time outside capital was brought in—for the plans of the Rumely Company demanded that they do things in a big way.

The famous Gaar-Scott and Advance plants at Battle Creek, Michigan, and Richmond, Indiana, with their splendid machines, were added to the Rumely fold, also machines from the famous farm machinery lines of Falk, Seager, Watts, Robinson, Hendy, Northwest, etc., and the whole welded into a Greater Rumely Line.

Farm problems were attacked from the bottom. One of the greatest accomplishments of the Greater Rumely Company was the Oil Pull Tractor.

The Rumely executives realized that the greatest power job in the world, plowing, should not be attempted with the scarcest of all liquid fuels. John A. Secor, an established oil-engine builder, was called upon to design a successful traction engine for burning cold kerosene. He did it—from the first his work was a wonderful success—in two years the Rumely Company was making 75 kerosene-burning tractors a week.

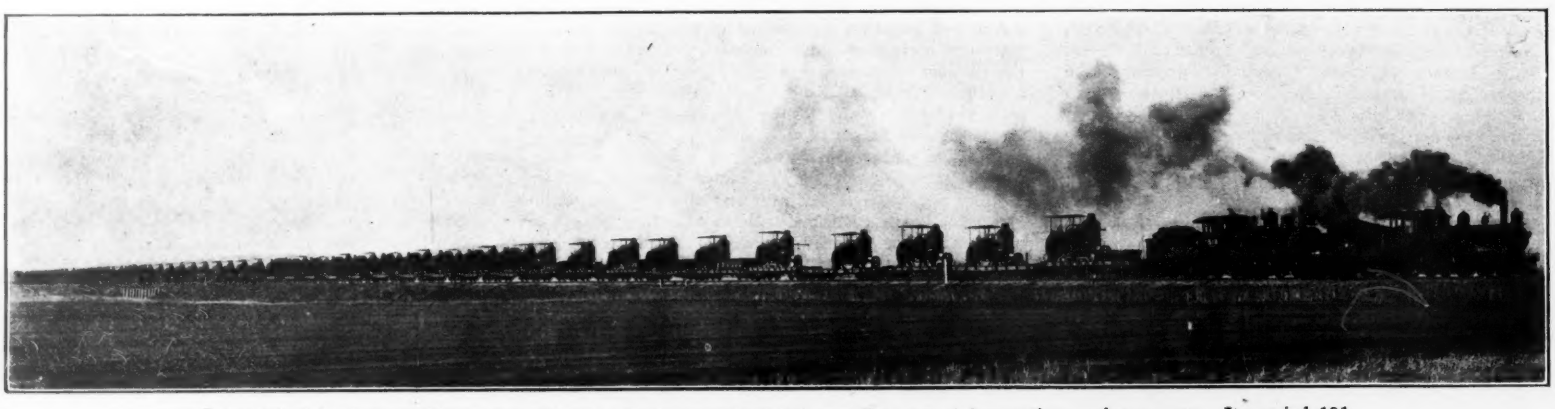
The Rumely Company is taking a wide interest in the education of the farmer. It was instrumental in the foundation of The Indiana School of Tractioneering, where men are trained rapidly in the operation and possibilities of traction engines, and sent on to profitable employment.

A deep interest has been taken in the Interlaken School, near La Porte, where young men—in addition to receiving the usual preparatory-school training—become real workers and themselves operate in a big way the 700-acre farm on which they live. This is building up young men, who from the start are coupling good educations with a real knowledge of the best methods of farming.

The Company is building up its own organization through a systematic plan for taking High School graduates and developing them in the direction toward which they are best adapted.

The little shop of 1857, with its output of three separators, has grown almost beyond the limits of imagination into an enormous business which sells over thirty different kinds of steam-engines, a half-dozen different gasoline and kerosene tractors, a dozen types of threshing separators, and a vast array of clover-hullers, corn-huskers and shellers, cream-separators, hay-balers, stationary and portable gasoline, kerosene, and steam engines, plows, land-rollers, feed-grinders—every one a labor-saving, cost-cutting machine. Not an item in the list that adds a cent to the cost of existence—and all to save the farmer from the drudgery that haunted Meinrad Rumely's earlier years—all to add to the farmer's profits by reducing operating costs.

From Meinrad Rumely and his helper in the little blacksmith shop in 1853 to the Rumely Organization of 1912—with its 5 factories, 45 branch houses, hundreds of salesmen, 5,000 workmen, 10,000 dealers, and $22,000,000 capital—is an industrial development that has few parallels. ***



Largest trainload of machinery ever shipped. Train comprised 102 new flat cars, 4 locomotives, cabooses, etc. It carried 101 Rumely Oil Pull Tractors, 81 Rumely Separators, and 139 Rumely Kerosene Tanks. The value of the shipment was about $500,000

What the Car-Wheels Say

They Sing a Low-Keyed Song of Expanding Empire—Out of the Past, through the Present, into the Future

By WILLIS P. MacGERALD

"ALL ABOARD! *All* aboard!" It was the railway starting-cry, as it sounded in the ears of a small boy back in the 70's, in the days when the Civil War was still a vivid memory.

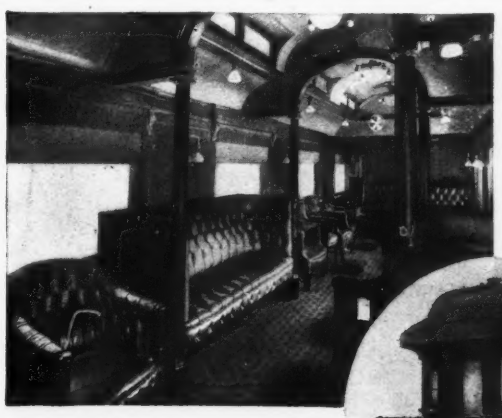
The message of the signal rope produced activity up ahead. Locomotive, flare-funneled, squat, and noisy, yanked at the tender; the tender made overtures to the baggage-car, and then day-coaches and smoker one by one groaned and rattled and squeaked out their reluctance at making the final move.

In the second coach sat this small boy, alone and immoderately proud to be alone, off for a considerable trip for at least the seventh time in his life. As the train gathered headway he leaned his head against the window—a little trick he had taught himself—and listened drowsily to the whirring of the wheels, the click-click-click over rail joints. Occasionally a resonant roar told of a culvert underneath, and then the grinding of hand-brakes would carry the rhythmic noise through *diminuendo* to full stop.

Not inharmonious, at worst, was this wonderful clamor that typified Progress; but the little lad's imagination made real melody of it all, and by and by he began to set words to the symphony; the car-wheels had begun to sing to his mind's ear an actual song of human achievement.

These were the *sagas* of a young American's worship of heroes. The giants of invention whom he celebrated were the Watts and Franklins, the Stephensons and Fultons and Morses, whose discoveries lie at the foundation of modern transportation development.

More than a generation later the same lad, now grown, may sing to himself a more wonderful mind-song as he transmutes the murmur of railway wheels to inner melody. No longer a tawdry, flimsy day-coach, heaving and jolting on the track, to fret the eye and jar the body. No longer a glimpse, through the forward door, of another flimsy car, bucking and swaying and tugging at its tether, with a valiant brakeman struggling at the wheel to set the brakes. The latter-day song of the wheels is pitched to softest key—of sound and color and sensuous comfort all in concord.



Buffet Parlor in Lounging Car

And what a *saga* is this! It celebrates the past; it glories in the present; it has faith to believe in the future it cannot penetrate.

The new *saga* exalts new heroes along with the old—masters of invention, masters of finance, masters of empire-building in all that the word implies—titans for far-sightedness, for faith, for devotion, for courage. And the new *saga* is shot through and through with prophetic confidence of wonders to come and heroic figures yet to arise.

It is men and women—to be considered as individual human forces working collectively—who have set themselves to the task of molding this continent commercially. The striving of most of them, to be sure, has been all in the way of making a living, but not for that reason must it be considered sordid. Fact is, the thing is epic, and many a canto in the poem belongs to the story of the building of the steel highways.

Listen a moment to Joaquin Miller as *he* set down what the car-wheels sang to *him:*

> We glide through golden seas of grain;
> We shoot, a shining comet, through
> The mountain range against the blue,
> And then, below the walls of snow,
> We blow the desert dust amain;
> We brush the gay madrona tree,
> We greet the orange groves below—
> We rest beneath the oaks, and we
> Have cleft a continent in twain!

We hear so much second-hand patter about "melting-pots" and "America, the crucible of the races," that one longs for the flash of an original expression that would as aptly point the same idea. However, that very idea is part of the burden of the car-wheel's song as one journeys West or Northwest or along the steel paths in between. Provincialism is passing, and the railways are responsible. The days of community narrowness and sectional pettiness and individual brain-fog surely are numbered in a country where so nearly everybody reads, travels, rubs elbows with his fellows. Only in regions where railways have not penetrated can the solecism of dialect persist indefinitely.

These and such-like more or less obvious reflections may remind one of the katydid—"saying an undisputed thing in such a solemn way"—but blame it on the wheels. *They* sang it. They sang it only the other day on a trip between Eastern Tidewater and Lake Michigan. And, leaving the great Gateway of the West, then speeding over smooth rails to the Twin-City Portal of the Northwest, there was ringing in the ears a refrain yet more insistent.

It is the same traveler who as a boy marveled at the travel-helps of his day, crude as they were. Arriving on an early train from the East, he has had the day for sight-seeing and for business and has found Chicago well worth while. Dinner over, a taxi sets him down before six great granite columns, rising almost to the height of the building, and stretching a full block in width—entrance to a passenger terminal three city blocks long, with subways at street intersections.

"Jove!" says he to himself. "If this is the Gateway, I reckon I'll be glad to see this Golden Northwest!"

Passenger Terminal, Chicago. Chicago and North Western Railway

The "Twin Cities"—St. Paul and Minneapolis—with the Mississippi River flowing between, one hundred and seventy-five miles southeast from its headwaters in Lake Itasca, have attained a joint population of nearly three-quarters of a million, and an industrial and commercial importance that entitles them to the best possible outlet *via* Chicago, the "Gateway." And this outlet certainly is secured for passenger travel by the well-timed night run of the luxurious new "North Western Limited" of the Chicago and North Western Railway.

The New Passenger Terminal in Chicago represents the latest word in thoughtful provision for the comfort of travelers, the handling of the mails, and the expeditious despatch of trains over the elevated tracks that lead outward—to tap the western two-thirds of the continent, the Land of Opportunity. This Terminal is the point of departure, daily, for the suburban dweller and for the traveler bent on business or pleasure. To such it must be a source of unending satisfaction. Its appointments, in all their wholesome completeness, have won the attention of railway men the world over, no less than of those who give special study to the problems of immigration.

Observation Platform

Parlor in Observation Sleeping Car.

To the stranger, also, who arrives, as I did, en route for the "Twin Cities" *via* the "North Western Limited," this Chicago Terminal offers features that well merit study. It is not the immensity of it (for immensity alone is nothing). It is not the massive architecture. It is not the broad, deep, inviting rotunda, or the high, ample lines of the track-level balcony, or the beauty of arch and pillar and balustrade, or the harmony of outline and material and color in the whole.

It is the fact that, without sacrificing an æsthetic iota, *every square foot is laid out best to serve its purpose.*

So you will see hurrying crowds at the rush hours, every last one of them with ample elbow room, moving in straight lines, each toward where he wants to go. Over this way goes one for a ticket—and with that he is out of the crowd. Over yonder he goes to check baggage. Here stops one, at an escritoire hung to a pillar, to scribble a telegram, and yonder to send it. Meanwhile the main line is moving on toward the waiting-rooms, and the rest-rooms, and to the train-shed for their cars.

Here is a revelation in the art of handling passenger traffic by the tens of thousands. The secret seems to be that the individual is quickly—almost automatically—shown *how to handle himself.*

Going upstairs, I saw even a hospital-room, with a trained nurse in attendance, where no charge was made for friendly service. And all the unusual comforts that wit could devise are found in this Terminal, in addition to those more ordinary facilities for travel-ease that ought to go without saying—and too often have to!

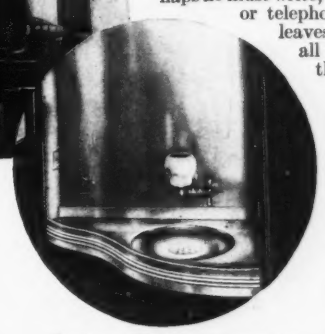
One first-class limited train looks so very much like another in these days of *de luxe* travel that one wonders in what direction a train-designer can turn, racking his brain for new construction and new devices to carry home-comfort and luxury over-continent. Yet ever there appears to be some further untrodden field for art and ingenuity, and this "North Western Limited" shows it.

If one happens to have heard that this train is drawn by one of the new "superheated" locomotives, carrying a lot of other devices that are Sanscrit to the layman—high as a bungalow, longer than most houses, and tipping the yard scales at more than four hundred and fifty thousand pounds—he will surely take a walk up alongside before the train starts. Then, if he happens to be awake early next morning, sees the still station lights that tell him the train has stopped, and then, wondering how long the wait is to be, looks out the window and finds the train is under full headway—no admonitory jerk, no jar, just a soft glide from rest to a mile a minute—*then* he'll remember the monster machine and her master driver that are pulling the "North Western Limited."

When the same traveler steps into his section, or compartment, and notes the soft glow of the tungsten electric bulbs (which make brilliant the day-coach, chair-car, and *de luxe* cars alike), he will remember the dynamo he saw whirring in the forward end of the long, corn-colored baggage-car. His eyes might tire with reading, but there is a color harmony of mahogany and green and amber and warm cream-brown to rest them. He may weary of his own company, but there's an observation parlor car where he may foregather with the women of his party, and, if he wants to smoke, up ahead is a buffet parlor lounging-car, with Spanish-leather easy chairs and sofas; a conference-room with table and chairs for six, equipped for what you will; tables and stands and buffet handy—every imaginable nook to woo one to a "comfy" fashion of passing the time away.

Would he quench thirst! There's nothing better than ice-cold, filtered Lake Michigan water, served where he sits, or fresh from a sanitary bubbling fountain in the lounging-car. Here, however, the buffet allows latitude for choice.

Would he read? Both parlors are rich in store of current magazines. Or, perhaps he must write, or telegraph en route, or telephone before the train leaves the terminal. It is all provided for, even to the long-distance-telephone connection from the observation parlor.



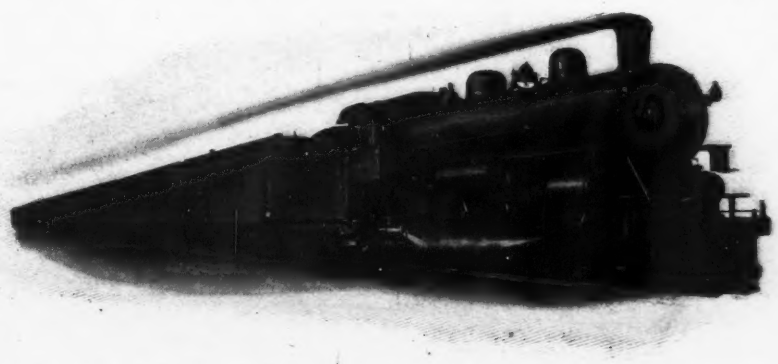
Sanitary Bubbling Fountain

Our traveler's party is a large one, perhaps. Be it so; he finds that these airy apartments which railway folk call "compartments" may be thrown two, or three, or more en suite. Going to his rest, he finds every toilet requisite ready to his hand, and even, in compartments, electric fans that may be regulated to different speeds, with ventilation and vapor heating under his own control.

Made a late reservation, eh? Got to take an upper berth? Well, what of that? It's the same easy bed, and two electric bulbs in the "upper." Or, too late for any berth at all? Well, even at that you will find the coaches forward are planned on the same standard of comfort proportionately, and whoever designed the seats of the chair-car and day-coach has worked in an easy roll in the cushion—just to fit the "small of the back"—that is calculated to mean everything to the wearied traveler.

"What the car-wheels say" in this year 1912 is a long story. To one who sends his memory back over twenty-five or thirty years of railway travel the story is one of startling change, and all for the better. Change—not alone in the wide extension of lines, the reduction of grades, the straightening of curves, the ballasting of

(*Continued on page 34.*)

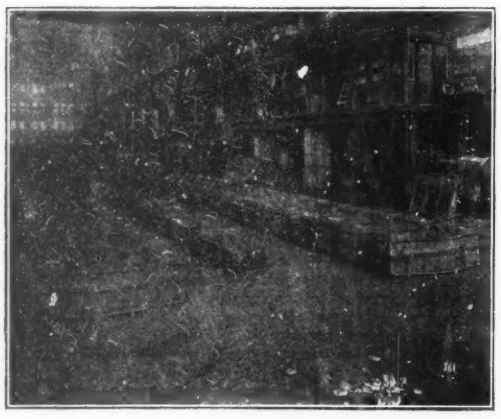


The New Type of Locomotive that draws the North Western Limited. Weight 225 tons.

THE BETTENDORF INDUSTRY

THE genius of a single master mind is sometimes responsible for the creation of an idea and for the development of an organization which shall make of the idea a great commercial success. It is seldom, however, that an inventor and one possessing extraordinary mechanical or engineering ability possesses the necessary qualifications for the building up of a great industry. One of the secrets of a successful business is the perfection of the right kind of an organization. The late W. P. Bettendorf, however, was a man whose inventive and mechanical genius has never been questioned, and the magnificent plant that stretches along the Mississippi River for nearly a mile stands as a monument to his ability for the building of the organization which is today conducting one of the most successful manufacturing enterprises that furnish equipment to the railroads of this country.

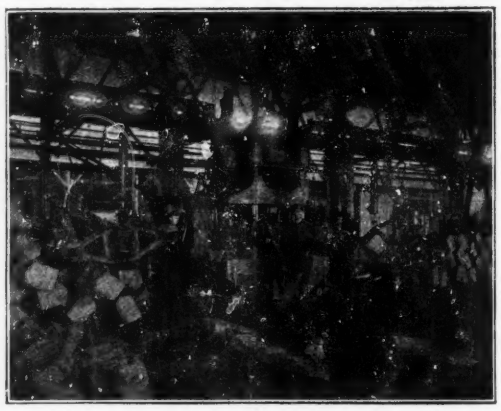
In 1886 W. P. Bettendorf, then in the very prime of life, went to Davenport, Iowa, for



A Scene in the Foundry

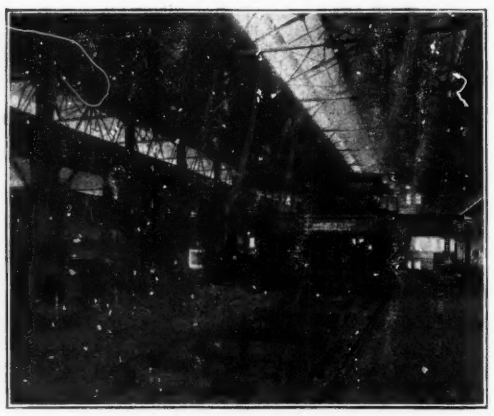
the purpose of engaging in the manufacture of metal wheels. He had patented a new and novel metal wheel and a method of manufacturing the same. Within a short time he had established the success of the new enterprise; and the decided merit of the new wheel, which at once monopolized the market for a product of that kind, has made it today the leading wheel for agricultural implements. Always of an inventive turn of mind, Mr. Bettendorf next invented and became the patentee of a steel gear for farm wagons and other vehicles, and, closing out his interest in the metal-wheel plant, he organized a company, with himself at the head, for the manufacture of the wagon. This business quickly assumed large proportions, and in connection with it was begun the manufacture of some railway-equipment specialties.

Associated with him in his business enterprises was his brother, J. W. Bettendorf, on whom a great deal of the responsibility for the successful conducting of the business fell, and to whom large credit is due for the present large proportions to which the company has developed. The invention by W. P. Bettendorf, and the manufacture of the I-beam car bolsters by the Bettendorf Company, marked the beginnings of a railway-supply manufacturing concern which has



Hydraulic Testing Press for Truck Frames

probably had the most phenomenally successful growth within a period of a few years of any company of its kind. Following the invention of the I-beam bolsters came the one-piece cast-steel truck frames and other steel parts for the railway freight car. The immediate success which marked the introduction of these various railway freight car specialties determined the inventor to devote his attention quite exclusively to the manufacture of steel railway car parts, and eventually cars in their entirety. The necessity soon became apparent for the establishing of a large separate plant for this purpose, and a site comprising about forty acres was secured in 1902, and the first buildings now comprised in the present plant were erected. The location selected was just east of the

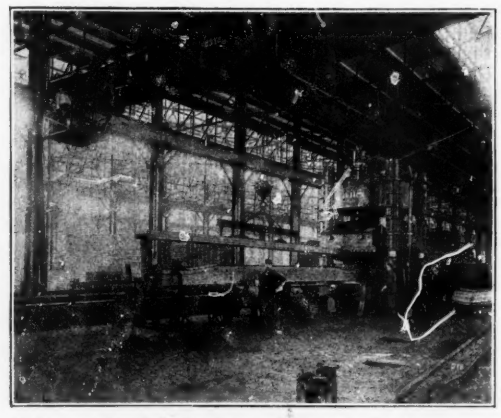


Charging Machine

city limits of Davenport, where a new town was laid out and given the name of Bettendorf.

The indefatigable energy of W. P. Bettendorf, together with his mechanical knowledge and experience and his remarkable talent for organization, within a few years evolved a business of large proportions. The year when the business was upon the threshold of its success its founder, while most actively devoting himself to the enlargement of the plant and the business in every direction, was suddenly stricken with a bodily malady that baffled the skill of the eminent physicians attending him. On June 3, 1910, W. P. Bettendorf breathed his last amidst a scene that on every hand proclaimed his genius and his marked ability.

Mr. J. W. Bettendorf, who had been associated with his brother since the beginning, shouldered the added responsibility and set to work to carry forward and complete the plans for the further enlargement of the Bettendorf industry. The Bettendorf Company, with J. W. Bettendorf at its head, and ably assisted by J. B. Bendixen, its vice-president, with a large and experienced organization, is developing at Bettendorf, Iowa, the most comprehensive plant in the country for the manufacture of steel railway car parts, and



2500-ton Hydraulic Press Used on Underframes

eventually of steel cars of every description in their entirety.

With the several tracts recently purchased the grounds now in use cover an area of about one hundred acres, and the buildings have a total aggregate floor space of upwards of eight hundred thousand square feet, or about eighteen acres, that is under roof. From the east side of the foundry to the tracks at the west end of the main shop it is nearly a mile, and the total acreage of the land now owned by the company on which the present plant is located, and that which is held for future extension, amounts to two hundred and forty acres. The situation is ideal for an enterprise of this kind, there being ample room for expansion on the wide level plain bounded by the Mississippi River on the south and the bluffs, some distance away to the north. The plant consists in a general way of two large office-buildings, the main erecting shops, the power station, the machine shop, storage buildings and yard, and the steel foundry.***

The Bettendorf Plant at Bettendorf, Iowa

Studebaker

IT would be hard to find anything that more strikingly illustrates the spirit of American progress than the steady rise of the industry founded sixty years ago by Clem Studebaker and his brothers.

Starting in the humble blacksmith shop at South Bend, Indiana, building step by step upon the secure corner-stone of steadfastness and honor, the Studebaker organization arose to its present commanding position of national and international fame.

Throughout the whole period of this splendid advance, the honest ideals of the founders have been jealously maintained, and The Studebaker Corporation today, in its products and in the placing of them, guards its heritage of integrity.

This integrity and this progress are summed up in the name Studebaker on harness, wagons, carriages and automobiles.

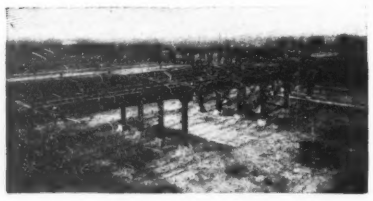
THE STUDEBAKER CORPORATION
SOUTH BEND, IND. :: :: DETROIT, MICH.

The Elevated Railroads of Chicago

CHICAGO is the marvel of all ages. Within the memory of its oldest inhabitant it has grown from a struggling village to the fourth city in size in the world and the second in the Western Hemisphere.

In this marvelous development the Elevated Roads have played an important part. Projected about twenty years ago, through territory sparsely settled, the Elevated Railroads have connected outlying sections with the great throbbing, pulsating heart of the city.

When the first Elevated Railroads were building in Chicago the population of the city was 1,099,850, in 1890. Twenty years later, in 1910, the population had grown to 2,185,283, and to-day it is conservatively estimated at 2,326,400.



View from Sheridan Road when Elevated Road was being constructed in 1893.

The problem of urban transportation is a vital one in any city. The homes of the workers must be connected with the factories in which they work, by cheap and rapid transit lines, if a city is to become great and prosperous.

In this respect the Elevated Railroads have rendered vast service to the community. Employer and employe alike have benefited by them. Great factories have sprung up in close proximity to the Elevated Railroads near the heart of the city, while outlying sections, practically inaccessible until the advent of the rapid transit lines, have become thickly settled with the homes of workers. That the city's workers are taking advantage of the facilities thus afforded them may be seen by a glance at the territory through which the Elevated Railroads run and at the number of passengers carried by them daily. The Elevated lines are particularly adapted for long-distance travel, where speed and comfort are determining factors, and this is largely the kind of traffic they handle. During the year 1911 the Elevated Railroads carried 160,000,000 passengers, or an average of 438,000 for every day of the year.

Chicago abounds in many attractions for its residents and the strangers and visitors within its gates. Its system of parks and boulevards is not excelled in this, if indeed in any other, country. The public parks are all within easy access of the Elevated Railroads. The South Park System includes twenty-four parks, with 2,495 acres; the West Park System has fifteen parks, with 1,035 acres, and the Lincoln Park System has five parks, with 700 acres.

In addition to furnishing the best means of rapid transit inside the city limits the Elevated Roads form a connecting link with interurban lines on the north, west, and south, so that more than thirty towns and villages within a short distance of Chicago may be reached practically at any hour of the day or night. Business men and salaried employes are beginning to appreciate the advantages of these connections of the Elevated Railroads with outside interurban lines.

On the West Side the Aurora, Elgin & Chicago Railroad, an interurban line, enters the city over the tracks of the Metropolitan Elevated, running to the Fifth Avenue Terminal, within the heart of the city.

Twelve years later, looking from Elevated Structure at same point as shown in the above picture.

Besides the interurban connection, the Metropolitan Elevated connects with the County Traction Company, operating suburban cars through the towns situated southwest of the city.

On the North Side, the interurban lines of the Chicago & Milwaukee Electric Railroad connect with the Northwestern Elevated at Central Street, Evanston.

On the South Side, the interurban cars of the Chicago, Lake Shore & South Bend Railroad connect with the South Side Elevated at 63rd Street and Madison Avenue, and the Chicago & Southern Traction Company, commonly known as the Kankakee Line, connects at 63rd and Halsted Streets.

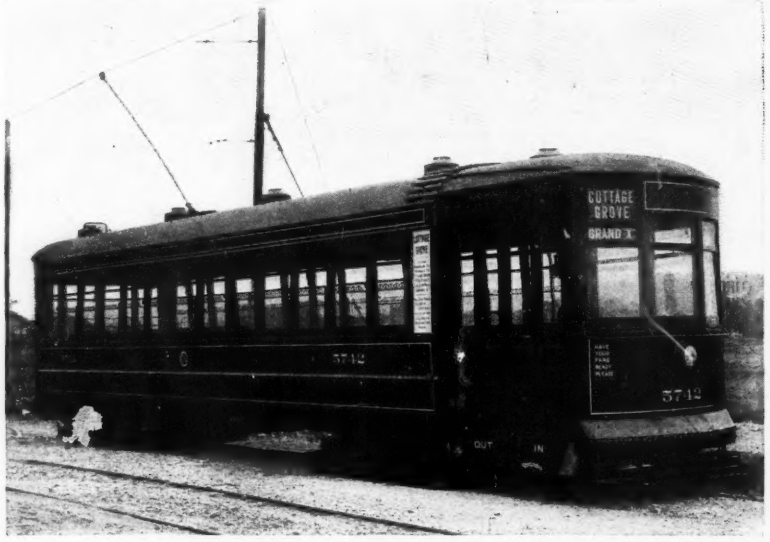
A map of Chicago and the elevated roads, giving locations and directions for reaching all public parks, buildings, and places of amusement, may be found at any elevated or railroad station, also at the prominent hotels. ***

Evolution of Chicago Street Cars

A HALF century ago a crude Horse Car, costing perhaps $500.00, ran on State Street from Lake Street to Twenty-second Street. Hay was strewn on the floor of these cars in the winter in an attempt to keep passengers' feet warm. There were gradual minor improvements in Horse Cars until along about 1880, when some of the most important street car lines were equipped with Cable Cars, the size of which were not much larger than the old horse cars. The Cable Cars were heated by coal stoves suspended below the floor of the car, and were lighted by oil lamps. There never was much development in Cable Cars aside from the fact that standard coal stoves were installed in the cars and Pintsch Gas lights substituted for the oil lamps, otherwise the cars remained the same until the time the Cable Systems were abandoned. The first Electric Cars were installed in 1892. These cars were also of the small single truck type, and heated by means of coal stoves, but were lighted electrically. Some of the old Horse Cars were converted into Electric Cars.

About 1901 this type of car was superseded by a large double truck Electric Car which was provided with cross-seats, electrically lighted and heated and well ventilated. The next most important advance in this type of street car was made in 1907, when the Chicago City Railway Company introduced for the first time in the United States the type of car known as the PAY-AS-YOU-ENTER, which has since been generally adopted in the larger cities of the country.

The City of Chicago by ordinance of 1912 required cars to be stopped at the near side of streets for the purpose of taking on and discharging passengers. In order to meet this provision, and at the same time to secure the maximum convenience and comfort of passengers, and to reduce the possibility of accidents to a minimum, and to increase the welfare of the employes and the efficiency of operation, the Chicago City Railway Company introduced in Chicago, in 1912, the type of car known as the "NEAR SIDE CAR."



Chicago City Railway Company's Near Side Car

Elgin, Joliet & Eastern Railway Company

IN the development of the Gary District, no one railroad has played a more important part in such development than the Elgin, Joliet & Eastern Railway, a subsidiary company of the United States Steel Corporation.

This road, which is an outer belt road, beginning at Waukegan, Illinois, and running around the City of Chicago at an average distance of about thirty-five miles, crosses every railroad entering the City of Chicago. Its line was extended into Gary when the United States Steel Corporation decided to build their large steel-works at that point. It has branch lines reaching into the Illinois Steel Company's plants at South Chicago; a branch line into Whiting, Indiana, to the Standard Oil Company; and a branch line into East Chicago, Hammond, and the west side of the Calumet River in South Chicago, thus affording direct connections from all of this Gary and Calumet territory to all of the lines entering Chicago, receiving and delivering their freight at the outside junction points, avoiding congestion and delays of traffic that passes through the City of Chicago.

The Elgin, Joliet & Eastern road is the only railroad having direct connections into all of the subsidiary plants of the United States Steel Corporation, in the Calumet District, which are the plants of the Indiana Steel Company, the American Sheet & Tin Plate Company, and the American Bridge Company at Gary, the Universal Portland Cement Company's plant at Buffington, and the Illinois Steel Company's plant at South Chicago. It also has track connections into the manufacturing cities that have been purchased by the American Locomotive Company at the eastern end of Gary, the American Car and Foundry Company at Gary, and the Baldwin Locomotive Company at East Chicago.

Realizing that the growth of the Calumet District would be phenomenal, and anticipating the requirements of a terminal road in this district, the Elgin, Joliet & Eastern road made plans for one of the largest, if not the largest, freight yards in the United States, these yards contemplating tracks with a capacity of fifteen thousand cars. About two-thirds of the yard are completed and have been in operation for about four years. The remaining tracks in the yards will be added to as the business in this territory grows.

Many large manufacturing firms have located on the line of this road in order to avail themselves of the exceptional transportation facilities offered by such location, they realizing that their inbound and outbound shipments are handled with greater promptness to and from all connecting lines of the E., J. & E. road than when such shipments are handled through the congested terminals of a great city like Chicago.

How the Pneumatic Tool Company of Chicago Grew into the Commercial Car Business

W. O. DUNTLEY, President of the Chicago Pneumatic Tool Company, was one of the original automobile enthusiasts of this country, and while the industry was still in its infancy he saw the great future that was ahead of the automobile. The idea of manufacturing a self-propelled vehicle, however, did not occur to him until 1902, when he designed and had made under his personal supervision, and largely at his own expense, an electric motor truck suitable for commercial use.

While nothing further was done at that time, the outlines of a commercial car, embodying his own ideas of construction and design, were slowly forming in Mr. Duntley's mind, and he saw visions of his company engaging in the business on a large scale.

Each of the superintendents of the several factories of the Company was fortunate enough to possess a pleasure car of his own, and at all the conferences the subject of commercial cars, and how they ought to be built, held a great share of their attention. The consensus of opinion was that there was a big field for a commercial car built on somewhat different lines than those then on the market.

The immense capacity of the company, its great manufacturing, selling, and mechanical resources, was a temptation toward experimenting, and in December, 1909, an order was issued on the Franklin, Pennsylvania, plant to build twenty-five cars. The name "Little Giant" was selected as the most appropriate, that being the trade name of the company's line of pneumatic drills manufactured at their factory at Cleveland, and at the same time suggesting the strength that the new car was to possess.

The "Little Giant" as first made was little more than an assembling proposition, but as the design slowly crystallized the company saw the practicability of manufacturing the working parts, engine, transmission, etc., with the precision machinery installed in its Detroit, Cleveland, Chicago Heights, and Franklin factories. "Little Giant" cars are not only in use in this country, but on the Continent, and in England and Japan. This year the company will build 1200 cars, and next year they expect to build 1500. Thus it will be seen how, little by little, the Chicago Pneumatic Tool Company grew into the commercial car business. It could not help itself. ***

Bion Joseph Arnold

IT is curious to note how rapidly the demands of every age of the world's development have been met by the appearance of exceptional men who satisfy new wants and solve new problems. The geniuses who in the last century contrived the marvelous applications of steam and steel and electricity satisfied the world's need of quicker transportation.

The operation of the facilities these giants created has given rise in turn to new problems that are of vital importance, the economic and social relations of these inventions to the real welfare of the people. Public Service Commissions in all parts of this country are seeking to readjust these relations so that all the people shall be fairly served; that neither the inventor, capitalist, nor the multitude shall exploit or be exploited by the other. In more cases than could be fully enumerated on this page they have turned to Bion Joseph Arnold as the arbitrator who, by reason of his long practical experience, comprehensive grasp of all the facts and a most equable temperament, has rendered even justice to all parties concerned.

Born at Casenovia, Michigan, in 1861, of old Rhode Island stock, Mr. Arnold was reared in Ashland, Nebraska, where his father was a prominent lawyer. When very young he began to show a genius for mechanics. Under the adverse conditions of a pioneer country, and without adequate tools or instructors, he originated many devices, and at fifteen he built a steam-engine, at sixteen a bicycle, and at eighteen a complete working model locomotive.

Graduated from Hillsdale College in 1884, he took a post-graduate course at Cornell, and since then has received high honors from several institutions of learning. His pioneer achievements in electrical engineering, his specialty, have been many and immensely profitable, among them being the first elevated electric railroad at Chicago, 1893, equipment of the Chicago & Milwaukee Electric Railroad, electrification of the Sarnia tunnel of the Grand Trunk Railway System, and as a member of the commission in charge of the electrification of the terminal of the New York Central Railroad. These and others with which he has had an authoritative connection involved expenditures of over $300,000,000.

Mr. Arnold has recently devoted much time to the solution of public-utility problems, and has submitted reports upon the traction systems of Chicago, New York, Pittsburgh, Providence, Toronto, Cincinnati, Seattle, Los Angeles, San Francisco, Sacramento, and Kansas City. ***

The Chilled-Iron Car Wheel

THE chilled-iron car wheel of to-day is the surest, safest, cheapest, and most enduring part of any railroad's equipment. To the railroad man of the last two generations this wheel has been the standard of car strength, the synonym of security. The early development of railroading in America was retarded by the difficulty of finding serviceable wheels to carry the cars. They were made of wrought iron, chilled iron, and steel tires, all bolted together by various processes, and all unsatisfactory in service. Much better wheels could be bought abroad, but the high price and delays in shipment made this impractical. By the lack of good wheels the railroads were embarrassed.

The man arose who supplied the great need. A patent was issued in 1850, to N. Washburn, covering a one-piece, chilled-iron car wheel, having a convex double plate, joining toward the tread, forming a single plate, which was reinforced with brackets. That make-up still is, with certain improvements, the chilled-iron car wheel of to-day. In the sixty-two years of its existence nothing better has been invented, and it is difficult for the human mind to conceive of anything essentially better. Surely, the name of Washburn deserves special fame; for to the invention of Washburn much of America's growth of railroads—with the resultant growth of the country's prosperity—is due. When he designed his wheel there were in this country only 9,000 miles of railroad, and very few cars. To-day, according to the report of the Interstate Commerce Commission for the year ending June 30, 1910, there are more than 240,000 miles of railroads, and 2,133,531 freight cars—to say nothing of passenger cars. About ninety-seven per cent. of all wheels under freight cars are chilled-iron car wheels, so that there are to-day, in the freight service alone, more than sixteen million of these wheels—not counting those in use under passenger cars, engine tenders, private cars, and street cars. The chilled-iron car wheel has contributed largely to all this development not only by its excellence, but by its reasonable price, which has always kept it well within easy reach of those who operate railroads. Where can common castings be bought at one and a quarter cents a pound? Some railroads, nevertheless, try to secure a lower price. Is not this inviting disaster because of the temptation to sacrifice quality to cheapness?

The development and improvement of this wheel have kept pace with the growth of the size and carrying capacity of the cars—indeed, the wheels have always been a step in advance of the work they were to do. Before 1875, the biggest load of a freight car was ten tons; in 1884 it grew to twenty-five tons; in 1886, to thirty tons; in 1895, forty tons; since 1901 from fifty to fifty-five tons. Very few cars nowadays carry more than fifty tons. These run on wheels that weigh 725 pounds apiece, agreeably to the standard adopted by the Master Car Builders' Association, which also exacts a 625-pound wheel for the car of only 30 tons' capacity. During the evolution of the freight car from 10 tons' to 50 tons' capacity, it has not been necessary to increase the weight of the chilled-iron wheel proportionately with increases in other parts of the car and rail.

Exact calculations show that the increase has been as follows: car capacity, 400 per cent.; weight of axle, 149 per cent.; weight of rail, 100 per cent.; weight of wheel, only 38 per cent.

According to the report of the Interstate Commerce Commission for the year ending June 10, 1910, there were 383,000 fifty-ton cars in service, using about 3,000,000 wheels. Accurate records have been kept of the service of 677,238 of these wheels during six years—the remainder having been used on roads which did not preserve the records. The highest proportion of defective wheels was 1.7 per cent., in 1906, and the average replacements were only 9-10 of 1 per cent. Out of the great total of 677,238 wheels, only 86 had to be replaced on account of broken flanges—and a broken flange occurs in many cases, because of defective frogs, crossings, or rails. It is noteworthy that these wheels are sold under a four years' guarantee, also that since the adoption of the Master Car Builders' standard, of 1909, there have been practically no defective wheels.

It is startling to consider the great increase in efficiency that has constantly accompanied the development of the chilled-iron car wheel, while the cost has as steadily diminished. The records show that the railroads are getting to-day ten times as much efficiency out of the wheels under fifty-ton cars as they obtained, in the old days, from the wheels under the ten-ton cars.

What is the chilled-iron car wheel? It may be best defined as a body of metal scientifically moulded, in which the iron structure in every part of the wheel is admirably suited to its purpose.

The hard, white metal in the tread or running surface of the wheel is entirely too brittle for the plates and hub, but exactly what is needed for wear.

The plates must be soft so that they can withstand expansion stresses, due to brake application in service.

The hub must be soft so that the wheel may be easily machined for axle fit, and the elastic qualities of the iron prevent loose wheels.

The metal in the hub and plates would not be desirable for the tread, because there would be a sacrifice of wear, and the metal in the tread would not answer for the hub and plates, because there would be a sacrifice of strength.

The ideal structural conditions of the chilled-iron car wheel are produced by heat treatment through which the wheel passes during the process of casting and subsequent annealing.

No other type of wheel possesses such graded hardness of structure as the chilled-iron wheel. It has no rival.

It is a fact that the improvement of the flange of the chilled-iron wheel has been limited, because of track clearance. The standard frog and guard-rail clearance is the same to-day as it has always been—one inch and three-quarters, though many roads use one and seven-eighths or two-inch minimum clearance. The Master Car Builders have made some slight improvements in the flange, and are at the present time considering a flange for seventy-ton cars. With a slight increase in track clearance, a flange can be designed that will be secure for cars having a capacity of one hundred tons. This additional flangeway clearance can be secured practically without expense to the railroads; yet this is the only item which has not received recognition among the many improvements in wheel, rail, and track during the last half-century.

It is a curious fact that in this matter of flanges the cars of to-day are no better off than were the cars that carried soldiers and supplies to the battlefields of the Civil War. The need of improvement and the beneficial effects that will follow improvement in flanges are most pronounced. An additional track clearance of one-eighth of an inch will enable car-wheel manufacturers to design a flange for heavier cars than are in use to-day, and besides will make way for great betterment in the flanges of the thirty-, forty-, and fifty-ton cars. The manufacturers are ready and anxious to design a wheel that will carry loads up to one hundred tons. Surely it is high time for the railroads to make this important step forward in a line of development that has been ignored for half a hundred years. ***

Japan's Trade in Song Crickets

SELLING crickets is a lucrative business in Japan, where the insects are valued for their songs and kept in cages like canary-birds. In Tokio there are two wholesale merchants who send their agents into the streets of the large cities. The insects are carried in little bamboo cages. A good seller clears approximately from eighty cents to a dollar a day. An insect valued for its music brings from two to seven cents. The *Kusa hibari* is the most valuable of all the songsters, but the common cricket and the grasshopper are considered excellent singers.

The singers are collected from the fields in September, before laying-time. They are taken from the grass and shut up in glass jars. Soon after they are imprisoned the females lay their eggs and die almost immediately afterward. The jars containing them are kept in a temperature of 80° centigrade.

The young come forth in March.

The loss of eggs is about ten per cent. The male is the singer; he only is an object of commerce; and from one hundred eggs the cultivator, despite all his care, has only fifty salable insects. The lot of the locust is a martyrdom from birth to death. The locust is the toy of the Japanese child; he is caught on bamboo twigs rubbed with a gluey substance, and tormented according to the ignorance or the cruelty of his keeper. The life of the singing insect never exceeds a term of five weeks.

The Origin of the Heel

IT is said that the heels now worn on shoes had their origin in Persia, where they took the form of flat wood on sandals to raise the feet and protect them from the hot sands.

It was many years afterward that this fashion was introduced into Venice, but the reason for its adoption in this case is said to have been quite different. Here the originators of the fashion were jealous husbands who reasoned that their ladies thus equipped would not venture far outside the precincts of their dwelling. These heels were called "clogs," and in order to satisfy the vanity of the wearers and perhaps to sweeten the pill—that is, the discomfort of appearing in them—they were elaborately adorned, sometimes being incrusted with gold and silver. The height of the clogs determined the rank of the wearer.

THE fact that there are so few accidents on passenger trains equipped with Pullman cars—accidents due to lack of control of the train is due to the fact that Pullman cars are equipped with

CRECO BRAKE BEAMS

Of course trains are controlled by the air brake, but the air brake is never at its highest efficiency unless its power can be applied to the moving wheels of a car through the

CRECO BRAKE BEAM

The safety in travel on a Pullman sleeper is proverbial, but good design and the right kind of materials, care and construction all go for nothing when it is impossible to stop the swiftly moving train, when the brake beam is not doing its work. The question of safety to life and lading is involved in the brake beam. When the

CRECO BRAKE BEAM

is used, then a railroad has used every precaution for the safe control of its trains.

CHICAGO RAILWAY EQUIPMENT COMPANY

have been the pioneers and originators in all that is best in Brake Beam construction. They have always been and are today the

WORLD'S BRAKE BEAM BUILDERS

FINANCE

BY FRANKLIN ESCHER

A New-comer in the Field of Investment

THE past ten years have seen the entrance of a new kind of security into the investment field, and the past three or four years have seen the new-comer make tremendous strides in popular favor. Ten years ago the public service corporation bond—the bond of street-railway, gas, electric companies, etc.—was just beginning to attract investors' attention. To-day these public-utility issues, as they are familiarly known, are being put out all over the country in huge amount and readily distributed among the investment-buying public. A single decade has seen the popularization of a security, total issues of which now run annually into the hundreds of millions.

Twenty years ago electric street-car lines were just being established in our larger cities. Interurban lines were unthought of. Electricity was used for lighting purposes to only a trifling proportion of the extent to which it is now used. The telephone was just coming into favor. There did exist companies formed to supply the public with these different kinds of service, but they were small, and, as a rule, not backed any too well financially. The use of electricity for these purposes being a comparatively new thing, operations were more or less experimental. That made investors and capitalists slow to advance to the newly formed companies the money they needed. Public-service-corporation securities at that time were regarded, and with a good deal of reason, as a highly speculative proposition.

Down to within the last three or four years, indeed, this idea about public-utility bonds has remained more or less fixed in the public's investment mind. But since the panic of 1907 and the period of business prostration by which it was followed there has been a big change in this regard. There are still many investors who refuse to consider public-service-corporation bonds as investments, but there is nobody who can deny that during the troubled time five years ago these companies gave a better account of themselves than almost any other important class of enterprise. In the period following the panic, while railroad earnings were slumping off badly and industrial earnings were shrinking almost to the vanishing point, earnings of the public-utility companies held up remarkably well. Hard times made it necessary for people to economize, and put a great damper both on the manufacture and transportation of merchandise; but hard times or no hard times, people had to ride on street-cars and use gas and electric light. That is why, when earnings of every other kind of company were being slashed right and left after the panic, earnings of the public-service corporations all over the country were being remarkably well maintained.

There is not the slightest doubt that this practical demonstration of the ability of the earning-power of these companies is mostly responsible for the recent great growth in the popularity of their securities. Before this object lesson was given the bond-buying public there had been developed a considerable amount of popular interest in the public-utility issues, but this interest was nothing in comparison to what it is at present. There were bond-houses making a specialty of public-utility bonds before 1907, but where there was one such house then, there are two or three now.

This matter of the recently proven stability of public-service-corporation earnings has probably had more to do with popularizing their securities among investors than anything else. But there are several other things about these utility issues which have worked strongly to bring them into favor during the past couple of years. The first of these is the fact that while the railroads have been made the butt of all sorts of adverse legislation, and while suit after suit has been brought to dissolve the big industrial companies, public-service corporations have been practically immune from such attack. A second important consideration is the higher rate of income obtainable from good utility-corporation bonds than from railroad and industrial issues of equal class.

Had railroad and industrial stocks and bonds not been under fire as they have been during the past couple of years, the immunity of the public-utility companies would hardly have been emphasized as it has been. As the situation has developed, however, the investor has seen the railroads brought up with a round turn and half the big industrial companies in the country threatened with dissolution, the while the public-utility companies have gone unmolested about their business. That this feature about public-service-corporation bonds has appealed strongly to the investor ever since the Government started its anti-corporation activity is the testimony of all the investment-houses making a specialty of securities of this class. Untold millions of dollars of "frightened money," they claim, have been shifted into the bonds of the well-established public-service corporations, on the idea that these securities, at least, are safe from attack.

There has, in past years, it is true, been a certain amount of friction between some of the public-utility corporations and some of the State public-service commissions organized to supervise their operations. Such friction, however, never very serious, is growing less and less, as it is coming to be realized that these commissions are really the public-utility companies' best friend. They make it impossible, of course, for street-railroads and gas and lighting companies to charge over-high prices for their product, but on the other hand, by reason of the existence of these commissions, the public-utility concerns are assured of a fair price for what they have to sell and of immunity from ruinous competition. Then, too, there is the very important consideration that it is largely because the public knows that its interests are being safeguarded by the commission that it is willing to lend the companies money and buy their bonds. In practically every state where there is a public-service commission that body has direct supervision of the issue of securities by corporations operating under public franchise. Not only must such issues have the commission's sanction, but that body, as a general thing, has power to fix the minimum price at which the securities may be sold. That fact and the fact that the bond-buying public knows that the commission will see to it that the money raised will be properly spent, and that proper provision will be made for a sinking-fund, means that the company will realize a decidedly better price from the sale of its bonds than it would otherwise be able to realize.

The other great reason for the growing popularity of public-service-corporation securities is the relatively high rate of income which they yield. The first-mortgage railroad bond is a scarcity these days and sells at a price to net the investor only about four per cent. The first-mortgage street-railway or electric-lighting-company bond, on the other hand, is to be had in great variety, and at a price to net the buyer a substantially higher rate of income. Of two equally good bonds, one secured by a first mortgage on the property of some public-utility corporation and the other secured by a first mortgage on railroad property, the latter will almost invariably sell at a considerably higher price.

For this two things are responsible. In the first place, public-service-corporation bonds, as has been said, are a comparatively new kind of security, and a large part of the investment-buying public is unfamiliar with them. In the second place, railroad bonds have, as a rule, a higher degree of convertibility—that is to say, they can be more readily converted into cash.

In its bearing on the price of public-utility bonds this fact that in spite of their gain in popularity in recent years their investment merits are unknown to a large part of the public is of the greatest importance. There are tens of thousands of satisfied holders of utility bonds all over the country, but there are other tens of thousands of investors who know little or nothing about them and would not think of putting money into them. The market is therefore, in a sense, restricted. There is not focused upon a new issue of first-mortgage public-service-corporation bonds the same amount of investment-buying power as is concentrated upon a new issue of railroad securities. And, in consequence, they do not sell as high.

The second reason is that, except in the case of very large and well-known issues, public-service-corporation bonds do not as a usual thing possess a very high degree of marketability. The bonds of a street-car company in some Western city, we will say, have been brought out by a New York banking-house and distributed among its clients. After the distribution has been effected, trading in the bonds is likely to be on a moderate scale. A customer of the house having bought, and wanting to get out of his investment, can usually get the house to take the bonds off his hands, but this is an operation which takes time, and not infrequently means that a price slightly lower than that originally paid must be accepted. Bonds of this kind are designed for long-term investment, and, while they can be disposed of if need arise, are not the easiest things in the world to turn into cash.

Securities which lack this quality of ready marketability always sell at considerably lower prices than those which have it—a large part of the bond-buying public will not touch a bond which has not an active market. But on the other hand, there are a great many investors who have come to realize that by sacrificing this quality of marketability on at least a part of their investments they can gain a material increase in income. After all, when a man comes to put away some of his surplus in bonds for the sake of the income he will derive, it makes very little difference whether there is a ready market in the bonds or not. He doesn't buy them to sell. He buys them to keep. It wouldn't do, of course, for him to tie up all his surplus that way, but there is no reason why a part of it shouldn't be so invested. Ready marketability is something he doesn't need—why, then, should he pay for it? If he can get a five-per-cent. income from a first-mortgage public-utility bond which has no particularly ready market as against only four per cent. from a first-mortgage railroad bond which has, why shouldn't he enjoy the higher income? There *is* no reason why he shouldn't. But, as has been said, a great part of the investment-buying public won't buy bonds which have not a quick market, and so refuse to touch many public-service-corporation issues. That makes them sell lower—at present—than the price at which their intrinsic investment merits would entitle them to sell.

There are, of course, public-utility bonds being all the time issued and sold which are no proper investment for the conservative man's money, but by following a few simple rules the investor can keep clear of such propositions. Of these rules the first is that public-utility bonds should be bought only from investment firms of the highest standing—firms which not only have the money to buy the bonds for their own account, but which have the organization and equipment thoroughly to investigate the propositions in which they are trying to interest their customers. And just about as important is the second rule, that the investor should dodge all securities of properties still in the construction stage, confining himself strictly to the bonds of companies in actual and successful operation. Not only that, but the net earnings of the company should run at least fifty per cent. in excess of the amount required to pay the interest on all outstanding bonds. Until the enterprise has reached that stage, its securities are no investment for the funds of the conservative buyer.

Two other excellent rules to follow, though not perhaps as hard and fast as the others, are, first, to buy only the bonds of large properties operating in thickly populated communities; and, secondly, to avoid the bonds of companies operating in communities dependent upon one or two industries. Large properties are free from many of the hazards to which small enterprises of this nature are exposed—a bad accident on a small street-car line, for example, may result in the award of such damages against the company as to cripple it financially. And similarly with companies operating in towns built around one industry. By a sudden cessation of activity in that particular industry and the closing down of the mills or shops, the prosperity of the whole community may be undermined and the earnings of its street-car line or gas and electric company seriously affected. In a big town having other industries to depend upon it wouldn't make so much difference.

In the purchase of public-utility bonds, as in the purchase of anything else, care and discrimination are necessary. But to the investor who uses his judgment and who confines his dealings to investment-houses of high standing, this class of bonds does undoubtedly offer an attractive opportunity to invest money safely at a comparatively high rate of interest.

The Late Will Carleton

WITH the passing of Will Carleton, America loses the most popular of her poets and the one whose writings have been more widely read and appreciated than those of any poet since the days of Whittier and Longfellow. There is hardly an English-speaking home in America—it might almost be said in the English-speaking world—where "Over the Hills to the Poorhouse" and "Betsy and I Are Out" are unknown. Will Carleton's works still command heavy sales, and selections from his poems have long ago been incorporated into popular anthologies. As a lecturer Carleton was well known throughout this country, and if he occupied a comparatively small space in the columns of the periodical press it was because he had been known so long that he had become accepted as an institution. He was little discussed because he had passed into history.

Carleton was born in Hudson, Michigan, in 1845. He was educated at Hillsdale College, Michigan, and afterward became a newspaper man, working in Detroit, Chicago, Boston, and New York. At the time of his death he was the editor of a small, old-fashioned magazine named *Everywhere*, published in Brooklyn and largely devoted to poetry. Some of the best of his later pieces appeared in this. On abandoning newspaper work, Carleton gave readings from his poems on the lecture platform in America and Europe.

Of Carleton's poems, "Betsy and I Are Out" was published in *The Toledo Blade* in 1871 and was reprinted in nearly every newspaper in the country. In the following year his dialect poems, printed under the title of *Farm Ballads*, appeared, and within eighteen months forty thousand copies had been sold. Other works of his are *Farm Legends*, *Farm Festivals*, *City Ballads*, *City Legends*, *City Festivals*, *Rhymes of Our Planet*, *Young Folks' Centennial Rhymes*, *Songs of Two Centuries*, *In Old School Days*, and *Drifted In*.

Will Carleton had a happy knack of attracting the reader by the simplicity of his themes and their pathetic or humorous appeal. His poem, "The Sandal-maker of Babylon," which appeared in HARPER'S WEEKLY as long ago as 1889, was reprinted in this publication, by request, in the issue of October 28, 1911.

Engineering Honesty in Railroading

By E. B. Leigh

MACAULAY said: "Of all inventions, the alphabet and the printing-press alone excepted, those which tend to abridge distance have done most for the civilization of our species." Properly understood, this means that the demands of highest civilization call for the nearest possible approach to the annihilation of distance. The desire for speed in travel and transportation is an outgrowth not of the idea of sport, but of the real demands of human intercourse and development.

Modern transportation is dependent on many elements, but speed must always be subordinated to safety.

We readily appreciate that the great speed of the very heavy modern passenger trains is made possible by the control afforded by the use of the modern quick-action automatic air-brake mechanism. Without adequate and proper control the eighteen-hour trains between New York and Chicago would not exist, and the great advantages to business, due to the closer communication between these two important cities, would disappear.

But without the air-brake and the control it offers, the modern, heavy freight-train of enormous tonnage and great length would be impracticable and the rapid movement of freight interfered with.

It has been aptly said that "a chain is no stronger than its weakest link." This is eminently true of the air-brake system, which, with reference to the car, begins with the cylinder and ends with the brake beam. Not only is the brake beam the most vital part of the foundation rigging, but, next to the air-brake mechanism, is the most important. The efficency of the entire brake mechanism is seriously impaired, if its very purpose is not defeated, by the use of inadequate brake beams.

Thus the successful operation of the air-brake depends upon the use of satisfactory brake beams and, consequently, the safe handling of to-day's railroad equipment finally depends upon the brake beam. Adequate brake beams mean that all the advantages of modern equipment may be enjoyed to the fullest extent in the most economical way. Inadequate brake beams mean increased cost of transportation, uncertain control of trains, delays, accidents, and wrecks.

Where the question of safety to human life is involved, as it is in railroading, the question of equipment used in the transportation of the traveling public becomes a most important one. Engineering honesty in the construction of railway equipment is an unquestioned guarantee of safety in railway travel.

In this country in the past the term "engineering" has been popularly considered as generally applied to civil engineering—that branch which relates to the construction and care of road, structures, waterways, etc. In recent years the development of mechanical, electrical, mining, marine, sanitary, and chemical engineering has changed this, and an "engineering works" is now not an improper title for a manufacturing establishment which makes a specialty and study of even only one appliance.

The work of an engineer involves in the highest degree the question of honesty. Disregard of this leads to disastrous results—results that are not so easily concealed here as in some vocations. The importance of an engineering construction is not to be measured by its size. More skill and integrity may sometimes be shown in a small construction than in one so great as to command the applause of the multitude. A very small invention or design may have tremendous importance; and neglect of details and slighting of quality and workmanship may lead to most disastrous results.

When any railway equipment is the joint product of honest civil and mechanical engineering and of a business system which affords the acme of service, it is the standard for estimating other construction. It is ideal, yet practical. It is a good thing to conceive an ideal which is far above average practice. It is a better thing to put that ideal into actual service. Even the morale of railway employees is benefited by the use of high-grade equipment.

"Whatsoever a man soweth that shall he also reap" is eternal truth. And it is just as true in engineering as it is in morals. A civil engineer who takes chances to save a few dollars in building a bridge is unanimously condemned.

Honest errors of judgment may be pardoned, but the wilful use of inefficient materials or carelessness of construction and workmanship to meet the demands of the economies of first cost, thereby jeopardizing life and property, cannot be too severely condemned.

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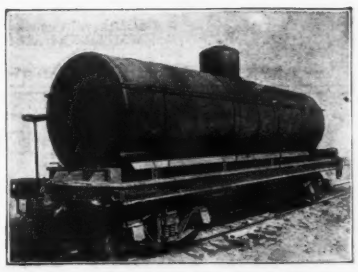

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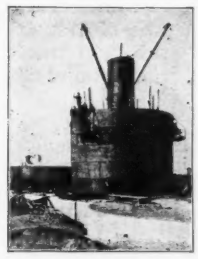

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Electric Railways and Civic Development

By John J. Cummings

No thinking man who studies the subject at all can possibly come to any other conclusion than that the wonderful development and growth of American cities during the past twenty years is very largely due to the improvements in transportation brought about by the continuously increasing efficiency of electric railway lines, in their various aspects of surface, subway, and elevated roads.

The city worker of to-day is no longer restricted to choice of employment within the immediate neighborhood of his place of residence, because the electric railway affords him the facility, at the minimum expense, of selling his labor at points where it will produce the largest remuneration.

Beyond all this there is also the effect on the social life of the community: the ease of communication between members of the same civic body; the ability quickly and comfortably to reach and enjoy theaters, lectures, concerts, and all the multitude of educational factors which make up the sum of human knowledge and progress to-day.

The electric railway brings these advantages not to a favored few, but to all the people, and, by this very force of its ability to cater to the comfort and convenience of the masses, the electric railway has an enormous effect on the appreciation of land values to an extent not approached by any other factor.

The electric-railway car is the conveyance of the common people, and it is the common people which makes the growth and the power and the activities of our great cities.

Those who are informed know that the improvement in design and construction of electric-railway cars, even in details entirely unnoticed by the public, has been remarkable. Some of the best engineering talent of the United States is constantly centered on the improvement of design and construction of electric-railway cars, to the end that the people may be served more expeditiously, more comfortably, and more safely, and that, at the same time, the electric-railway company may be able to afford these improvements by making them in such a way as to achieve economies in construction and maintenance.

Even to the average unobservant man or woman the tremendous improvement which has been made in electric-railway cars is apparent. Between the old bob-tail cars with their narrow steps and platforms, uncomfortable seats, their lack of heating and ventilating facilities, their floors covered with straw, and the modern well-proportioned car with its wide and roomy platforms and aisles, its clean, comfortably designed seats, its convertible side construction with sliding windows, permitting complete opening of every window in the summer and complete closing in stormy weather, with special facilities for ventilation, excellent heating apparatus, and full equipment of electric lights, there is as much difference as there is between the log cabins of our forefathers and the modern residence of to-day.

And, most remarkable of all, the electric railway is furnishing all this comfort and convenience with vastly greater speed and safety, at fares which directly show no increase, and frequently a decrease; and which relatively, compared to the distances traveled now on a single fare, show an enormous reduction to the community.

The electric-railway car of to-day is, literally, a house on wheels, and its design and construction are far more intricate and involve many more problems than the design and construction of a house. It must have safety, permanence, stability, durability; must be lighted; heated, ventilated; must be made comfortable in its boarding, seating, and riding qualities; must be so designed as to be kept sanitary at a minimum expense.

In order to give the service which traction companies do give and have given, it is possible to conduct operations only upon a carefully standardized basis. To make changes and alterations in car construction (even in things which may appear trivial as related to a single car), it is frequently necessary for companies to go to great expense in other departments. In fact, an authority in the electric-railway business has declared that the slightest changes in car-design immediately affect the entire road.

In view of all these circumstances, it is rather remarkable that the public has not taken a more sympathetic and co-operative interest in traction operation. Intelligent and well-directed criticism is always invaluable, constructive, and creative, and wherever used has done wonders for the electric-railway industry.

The public is the final beneficiary of traction service, and upon the public, in the long run, must rest the responsibility for the betterment of such service and for its ability to serve well and economically the needs of the people.

What the Car-Wheels Say

(*Continued from page 27*)

roadbeds, the elevation of tracks, the double-tracking of lines, the introduction of the block system.

Change—not alone in the building of giant locomotives, answering to the hand at the throttle as no horse responds to its driver.

Change—not alone in the building of coaches and cars so equipped as to reproduce home-comfort and luxury on the rail, or in providing at passenger terminals for all the creature wants of patrons.

The big change one is bound to remark is moral. There has been a change in the way in which almost all railways regard their patrons. No really great railway nowadays has any disposition to regard itself as other than the honest servant of the people. Those who persist in the old attitude have only to analyze their semi-annual balance sheets to find what they are losing by it.

I was curious to know why it was that The North Western line so closely approached the ideal in the attitude I observed in every employee toward the public.

"Why is it," I asked myself, "that on train and in Terminal, conductors, trainmen, porters, baggagemen, information-clerks, ticket-sellers—everybody—acts as if he had all his life been trying to make things easy for me, and wanted just now to outdo himself?"

By finesse I succeeded in getting an answer. One employee answered, "Why, we just naturally want you to have a good time while you're with us."

"Oh," said another, "that's what we-all's heah foh, suh!"

"Well," said yet another, "I don't know as the passengers on this train get any more attention than I'd like to have somebody else give my mother, or my wife, or me!"

Finally, I satisfied myself that the influence came from the top—first by the exercising of utmost care in hiring good human timber, and, secondly, by carrying the good example through all executive and operating departments—"putting it up to" the men themselves—putting them on their chivalrous mettle to make the service excel. I had succeeded in getting hold of a dog-eared "confidential bulletin" to employees which is food for thought to any business man.

A few extracts will show its character:

The Railway *owes* to those who make use of its lines a service which it can only render if every employee is brought to feel that his actual employer is the daily-shifting mass of fellow-men who buy tickets and ride on them. . . . A traveler, to be comfortable, must have comfort of mind as well as of body. Thus every railway worker is bound by his personal duty to accord to every man, woman, and child whom he meets that courteous treatment which means fullest satisfaction. . . . It is the spirit of the thing that we are after. Uniform courtesy springs from the heart—is the embodiment of the spirit of helpfulness. The man whose heart is right cannot be a "grouch." . . .

Courtesy, then—the kind of genuine, spontaneous courtesy we want practised on our lines—springs from kindliness; is the child of sympathy and well-wishing; is exercised with tact; expects no reward. . . .

Why not help us put the human capstone to our commercial structure? . . . go away beyond the strict letter of what is required? . . .

What it may cost, in terms of dollars and cents, to keep up with the travel-rush and have it done cheerfully is a matter that does not concern The North Western management in the slightest, because courtesy, shown to our "customers" in our name, cannot possibly cost so much as it is worth.

And I saw that at last I had got my answer. A railway that really wants to do its duty by the public always can find faithful employees to reflect its policy. ***

"DEAD WEIGHT"

Weight of Equipment and Numbers of Parts as Factors in the Cost of Railway Transportation

By J. W. Bettendorf

ELIMINATION of economic waste is one of the necessary roads to a real commercial progress. Probably in no other field of industrial endeavor is the same amount of careful study and experiment given to this problem as in the great industry of railroading. The very fact that railroading is transportation, is the carrying of individuals or the moving of freight, makes both necessary and unnecessary waste more probable—for there is a necessary as well as an unnecessary waste. In every business a sacrifice is made in one place in order that a gain may come in another, the gain always more than offsetting the loss.

Even the lay reader appreciates the fact that the steam-locomotive is one of the most wasteful pieces of machinery that we have. Its waste is necessary, economy of operation being sacrificed in order that we may gain an economy in time. The locomotive is a steam power plant on wheels, and as the wheels must run on a track of a certain width, the width of the locomotive itself is limited, even its height and length also have their limit, and in these limits certain power must be developed. The first question is not one of developing economical power, but of developing a certain amount of power as economically as possible. The same amount of power can be developed in a stationary steam-engine with, of course, much less waste of fuel. The freight-cars of any road, here to-day and there to-morrow, are apt to be found upon the tracks of any other road, subject to the varying conditions which surround it. The fact that the railroads, because of the very nature of their construction and operation, are wasteful, does not necessarily imply that the men constructing and operating them are also wasteful. They are the very reverse. The absolute necessity for necessary waste has trained the officials and many of the employees of our railway systems to be most strenuously alive to every possibility of eliminating any unnecessary waste. The steam-locomotive is an illustration only in one department of railroading, and while in many respects it is a complex problem, there are other problems before the railroads to-day requiring just as much intelligence, ingenuity, and perseverance. Cars and car-equipment are seemingly much less complicated in their construction and design, yet they have their problems, some of them harder to solve than any to be found in the locomotive or its equipment. How natural it is to think that if we build a structure of heavy enough material we are building it strong enough, forgetting that we are building it of such excessively heavy material that it may collapse of its own weight. While sufficient weight is necessary for strength, weight and strength are not synonymous terms. In fact, weight may be an element of weakness. If the weight of a car, for instance, is not properly distributed, or is not placed where it helps, it becomes a positive detriment. A freight-car is subjected, in its travels back and forth through the country, to an ever-varying number of shocks, strains, and stresses. It can be readily understood that a heavy car is liable not only to injure other cars in the course of being transported, but, if that weight is not properly distributed, to be injured itself. A freight-car is made up of superstructure, underframe, trucks, wheels, bolsters, etc.

Not only in dead weight and economic waste, but in unnecessary parts of car construction, is found another unnecessary waste. Cast steel has done much toward eliminating useless nuts, bolts, etc., and at the same time has added to the strength of car equipment and in so doing decreased the weight. Dead weight and unnecessary weight on the car is a waste, not only of good material, but it means tremendous added expense to a railroad in the cost of hauling it back and forth. No wonder, then, that railroad companies are vitally interested in the question of dead weight and the elimination of it as far as possible.

The *Railway and Engineering Review* says:

"The idea of reducing dead weight to a minimum was largely predominant in the minds of the officials of the Union Pacific and Southern Pacific railways at the time the all-steel box-cars, which they first introduced experimentally about five years ago, were designed; two cars differing only slightly as to details being constructed. In the latter part of 1908, twenty-five additional box-cars of the all-steel variety were constructed and placed in service. The construction of these cars was very similar to that of the experimental cars; a notable difference, however, being that rolled steel wheels, for trial purposes, were substituted for the cast-steel wheels originally used. This caused an increase of 1,220 pounds in the weight of the trucks of the newer cars.

"Observations covering the past three years have demonstrated that while temperature changes are more rapid in the steel car than in the wooden one, due naturally to the less effective insulating qualities of the two materials, the steel car is only slightly warmer in summer and no colder in winter than is the corresponding wooden car. It is stated also that no complaints of damage to lading due to 'sweating' have ever been received, and that no more tendency toward this much-looked-for objectionable feature is observable in the steel car than it is in the ordinary wooden box-car. The all-steel box-car, naturally is at a disadvantage in comparison with the wooden or composite car on the basis of first cost, but because of its reduced weight and the lessening cost of repairs, the experience so far gained by the officials of the Union Pacific railroad is such as to convince them of its greater economy."

Inasmuch as the individual railroad hauls more "foreign" cars—that is, more cars belonging to other roads than to its own—the railroad manager naturally questions whether he should design or build cars that should benefit other roads more than his own. The Union Pacific Railroad has decided that some road must make a beginning and has done so after investigating very carefully all questions relating to dead weight, hoping thereby to accomplish something for themselves and much for the railroads generally.

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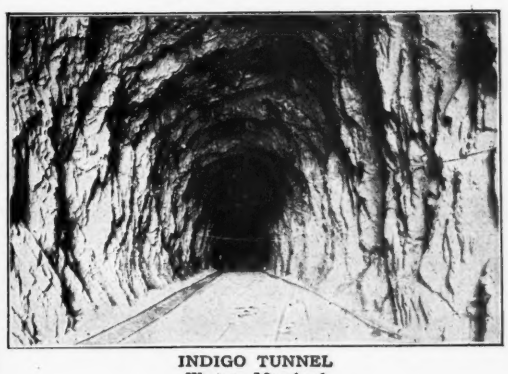

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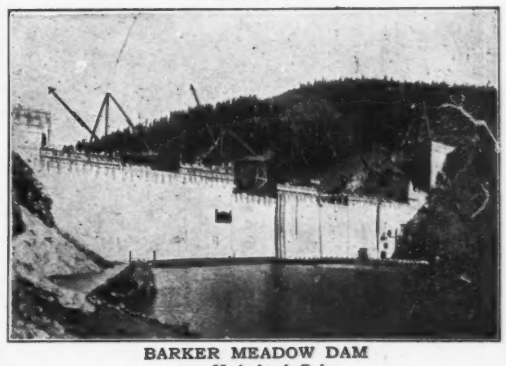

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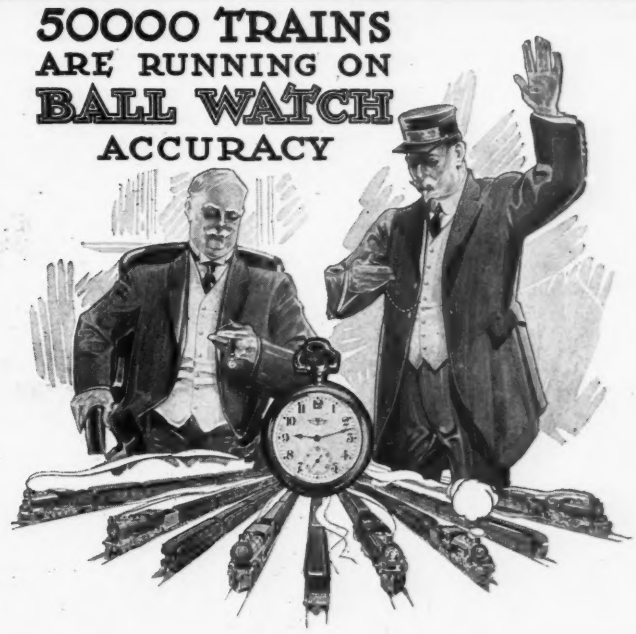

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Use them exclusively with one minor exception.
Bought them first in 1904.
Bought their 28th order in 1912.

By the Largest Flour Mills in the World.

The WASHBURN-CROSBY CO.
MINNEAPOLIS, MINN.

NOW have 31 in successful operation.
Under 5354 H. P. of Heine boilers.
Bought them first in 1908.
Bought their 7th order in 1912.

By the Largest Electric Plant in the World.

The COMPANIA ALEMANA TRANS-ATLANTICA DE ELECTRICIDAD
BUENOS AIRES, S. A.

NOW have 203 in successful operation.
Under 40,000 H. P. of boilers.
Use them exclusively.
Bought them first in 1906.
Bought their 8th order in 1912.

By the Largest Cotton Mills in the World.

The AMOSKEAG MFG. CO.
MANCHESTER, N. H.

NOW have 192 in successful operation.
Under 28,800 H. P. of Manning boilers.
Use them exclusively.
Bought them first in 1902.
Bought their 8th order in 1910.

Since 1902 These Four Companies Have Bought a Total of 625 Jones Stokers

The Under-Feed Stoker Co.
OF AMERICA

General Offices, Harris Trust Bldg., Chicago

NEW YORK, BUFFALO, MONTREAL, BUENOS AIRES, S. A.
PHILADELPHIA, CINCINNATI, MINNEAPOLIS
BOSTON, TOLEDO, ST. LOUIS, JORHAT, INDIA
PITTSBURG, DENVER, KANSAS CITY
DETROIT, TORONTO, BERLIN, GERMANY